LECTRICITY
N THE FARM *Magazine*

INIA POLYTECHNIC INSTITUTE
JANUARY 1951
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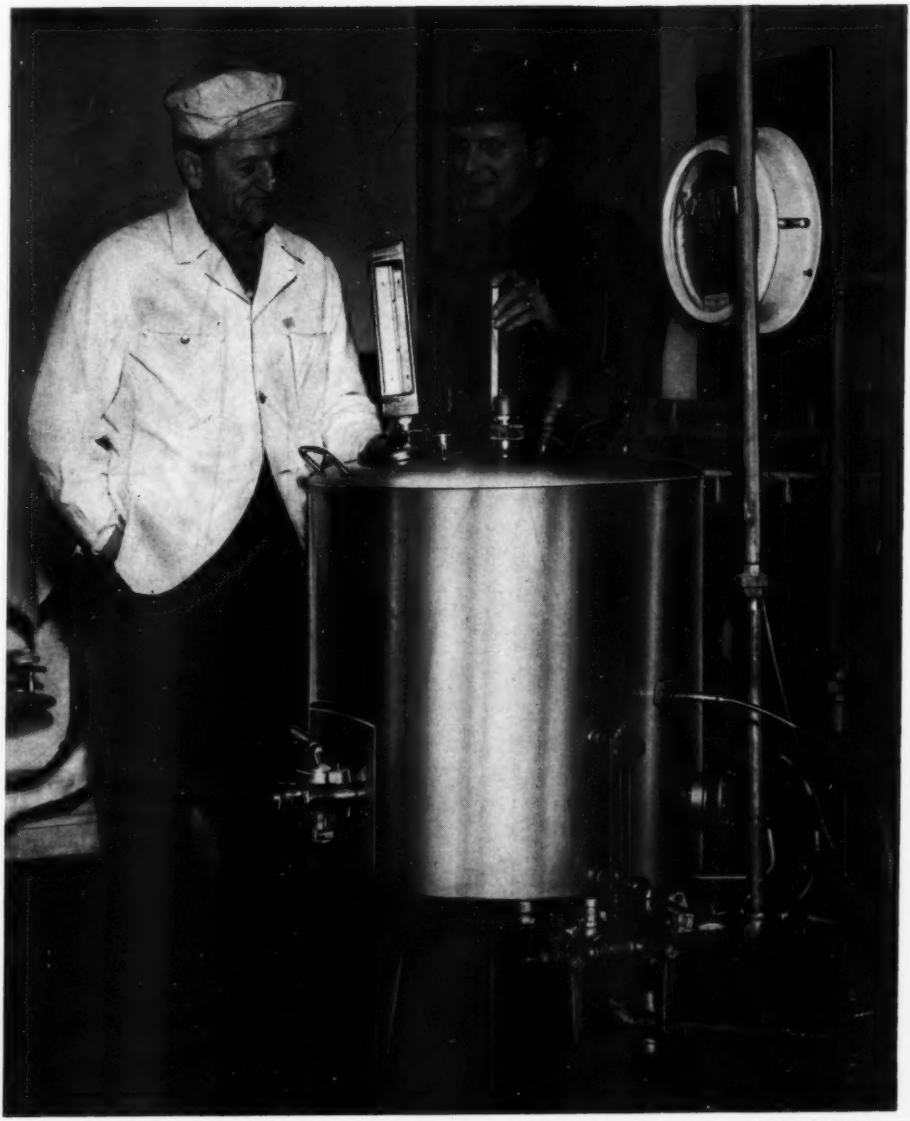
New—Automatic Egg Collection
Clean Your Milker Vacuum Lines
Farm-Size Electric Pasteurizer
Cold Weather Car Starting Aids
Dishwashers are Labor Savers

24th Year . . . . . No. 1



A CASE-SHEPPERD-MANN PUBLICATION

EQUIPPED WITH GENERAL ELECTRIC MOTOR

For quality in electrified farm equipment . . .

GENERAL ELECTRIC

FarmNews

. . . look for these labels whenever you buy

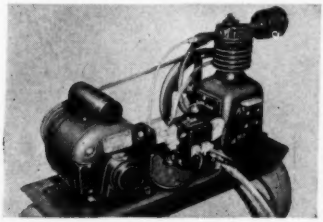
EQUIPPED WITH GENERAL ELECTRIC CONTROL

MORE POWER TO THE AMERICAN FARMER through more electricity on the farm

ENABLES 1 MAN TO FEED 40,000 BIRDS

ELECTRIFIED WORKSAVER OF THE MONTH

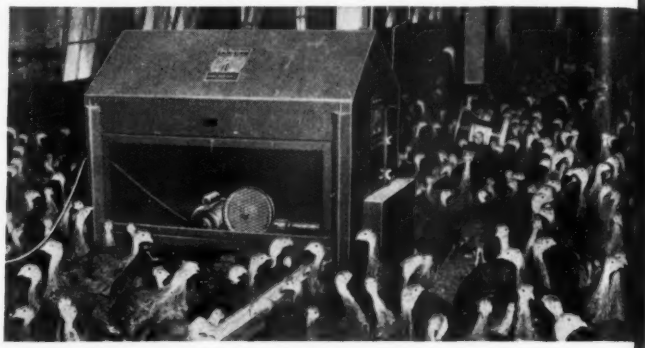
PORTABLE ELECTRIC AIR COMPRESSOR



There are dozens of farm chores compressed air can do quickly and easily — and there's plenty of compressed air on tap in the tank of this portable electric air compressor. This unit supplies the "hired help" to spray-paint barns and fences, inflate tires quickly, disinfect animals and their sheds and pens, and blow dust and chaff out of machinery and engine radiators where grain is being handled.

The model shown above supplies 1.91 cubic feet of air at 100 lbs. pressure and is equipped with a ½ hp General Electric capacitor motor. For more details, check "Air Compressor" on coupon below and mail to G.E.

New poultry feeder carries feed from bin to birds completely automatically; saves feed, boosts egg output



Completely mechanized poultry feeding that makes it possible for one man to care for as many as 40,000 broilers is now fully practical with this new automatic poultry feeder which is driven by a General Electric motor.

Moreover, the feeder enables a man to care for as many as 10,000 birds and still handle a full-time job, either on or off the farm. The feeder also increases bird weight and egg production while cutting feed consumption. For details, check "Poultry Feeder" on coupon and mail to G.E.

HOW THIS FEEDER WORKS

Feed for chicks, mature birds, turkeys is put in hopper which hol 450 lbs. (can be increased 1,000 lbs. The feeder delivers only as much feed as the birds will eat by means of a feed screw in the bottom of the hopper.

Feed is carried through the trough a flat chain which assembles like ordinary chain. At corners the ch operates around roller-bearing idl The trough is eas raised by adjusti leg assemblies. T hopper unit its can also be rais

EMIL KARKOSH MAKES SURE HIS BIRDS GET FRESH AIR

Iowan's new poultry house equipped for year-round ventilation

A strong believer in adequate ventilation for healthier, more profitable flocks, Emil Karkosh of Hudson, Ia. put his belief into practice recently when he built a new 22-foot by 64-foot poultry house. It features an extensive ventilating system built around two new electric ventilation cabinets, specially designed for the small and medium-size poultry house.

During the summer, hot ceiling air is forced out of the top opening. In winter, cold humid air is sucked out at the bottom. The General Electric motors which drive the fans require no care or oiling. For details, check "Ventilation Cabinet" on coupon.

General Electric Company
Section E669-112, Schenectady 5, N. Y.

I would like additional information on the following equipment:

- ☐ Poultry Feeder
- ☐ Ventilation Cabinet
- ☐ Air Compressor

NAME_____

ADDRESS_____

CITY_____ STATE_____

196267

Editor's Chat

IN TRIBUTE

"At my age it is not uncommon that contemporaries slip over the nearing horizon, into the Beyond. But it is hard to reconcile the passing of George Kable. His was an aura of timelessness, an ever looking ahead to Tomorrow's revelations, bonding his todays to the promise of the future. That Tomorrow might not come for him was beyond our acceptance. Yet here it ends.

"He leaves a void which for us will never be filled. For over a quarter century we have looked to him for leadership in farm electrification, the improvement of rural living thru the applications of electric energy. He offered inspiration, provoked thinking, flaunted precedent, insisted on the practical, correlated facts, developed leadership. Much of the advancement of electric service in rural areas thruout the Nation constitutes a monument to his life.

"His friendship was a cherished compliment. One always felt a genuine interest on his part, a kindly sharing of ideas, viewpoints and opinions. He inspired a feeling of loyalty, a very personal sense of comradeship.

"It is going to be mighty hard realizing that he will not be sitting at his desk, welcoming his callers with that characteristic smile and glad hand. No one, of course, can 'fill his shoes' on that job. No successor ever does, anyway. Whoever takes over will have to carve his own destiny. He can depend on us however for the cooperation and support which we were always glad to give George."

W. C. KRUEGER, Extension Agric. Eng.
New Jersey State College of Agriculture

"George Kable lived a rich and constructive life, and his work and the results of his efforts will live.

"Not only did he contribute to the material welfare of Rural America but he served to uplift readers of Electricity on the Farm morally and spiritually through his short snappy—original and direct editorials.

"We must not grieve over our loss, but know that he still lives because life *is* eternal. We on the other hand must rejoice in his splendid work and influence.

"The American farmer will never have a better friend and truer helper than he."

B. D. MOSES
University of California

"To me his passing means that the electrical industry has lost one of its best workers, our country has lost one of its most loyal citizens, and the world has lost a truly great American."

ED GILDEHAUS, Rural Service Division
Union Electric Company of Missouri

"Mr. Kable has had a long and interesting part in the development of American agriculture and in the furthering of the utilization of electricity on the farm. We sympathize with you for the loss you have suffered in the passing of this great American citizen."

JOHN W. TICKNOR, Asst. to Pres. & Treas.
National Farm Chemurgic Council, Inc.

"George Kable had more of the fine qualities that we all admire and respect, than most men are endowed with. Imbued with a seemingly boundless energy, a keen analytical mind, a capacity for saying important things with zestful editorial sparkle and letting no obstacles deter him from his objectives, I think I shall best remember him as exerting all these assets of his toward always doing the right thing, as he saw it."

W. T. ACKERMAN, Farm Service Director
The Connecticut Light & Power Co.

"George Kable was one of the pioneer leaders in farm electrification, and his death represents a very great loss to all of us, as well as to the farm population generally. No man has done more for farm electrification."

RUSSELL J. GINGLES, Secretary
National Farm Electrification Conference

"I suppose that George Kable had a wider acquaintance among people interested in rural electrification than anyone else in the Country. Certainly no one has done more to advance the cause of rural electrification than he has and I am sure he will be greatly missed by all of us who have had the good fortune to know him."

MORRIS H. LLOYD, Agricultural Engineer
Niagara Mohawk Power Corporation

"For all of George Kable's many friends who were his associates in the furthering of electrical applications to agriculture, his loss brings a deep realization of the broad and vital part he played in two spheres of industry—in the electric light and power business and in agriculture.

"His contributions to both fields which have brought them so much closer together will have a lasting effect on the farms of the nation. We who knew him—farmers, agricultural leaders, men of the electric industry—all of his friends, feel a deep sense of personal loss."

W. J. RIDOUT, JR., Rural Service Manager
Edison Electric Institute

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KENNETH V. ANDERSON, *Acting Editor*
NAN SHAW, *Housekeeping Editor*
KARL H. GORHAM, *Business Manager*

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ELECTRICITY ON THE FARM *Magazine*

ELECTRICITY: *Versatile Energy for Many Farm Uses—Power, Light, Heat, Electronics.* Easily adapted, started, controlled, automatic. Labor doer and saver, money maker, and product improver and increaser. Used intelligently, electricity changes the whole aspect of farm life and production.

Here It Is! An Automatic Egg Collector

By J. H. BODWELL†

Imagine standing in back of your egg grader. You press a button and Presto! In no time the eggs are brought from a 9,000 bird laying house and automatically graded. All you have to do is take them from this machine and place them in the proper egg cases. And mind you, that's a three story house, 60 ft wide and 188 ft long.

Archie Coll of East Jaffrey, New Hamphshire, has developed such an electric egg collector and is doing just that. Collecting eggs three times a day is no problem for him.

Archie started his business in 1930 with just 130 birds. But he had a vision of creating a profitable business. One that would stand on its own feet with every operation paying for itself. His goal was to keep each operation as simple as possible, and eliminate all unnecessary work. During the last twenty years he has improved his equipment, his methods, and he has added all kinds of labor saving devices. Today his plant is electrified to the nth degree.

Besides keeping a laying flock of approximately 16,000 hens, Mr. Coll broods 25,000 chickens and hatches 1,000,000 chicks annually. He employs six workers supplemented by the following electrical equipment: 26 incubators, 30 brooders, 3 automatic feeders, 9 automatic waterers, 30 water warmers, 3 water systems, 2 egg graders and 1 egg washer.

About a year ago, in spite of all this electrical help, Mr. Coll found that one-half of all his time with laying birds was spent in collecting, grading, and general care of eggs. He felt he would not get far on saving labor until this problem was solved. So—he rolled up his sleeves and started to work. His new laying house is the result.

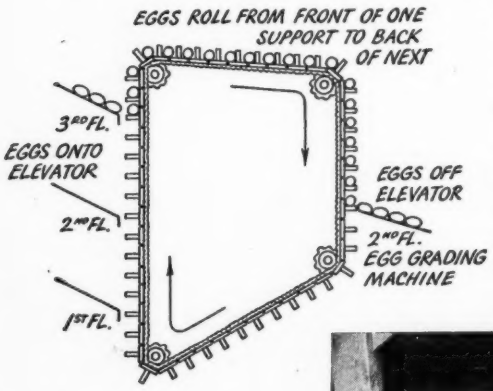
Problems to be Overcome

He felt there were five steps or parts to this problem. First, the right type of nest; second, getting the eggs from the nest immediately after the egg was laid; third, keeping these eggs safe until time to collect them; fourth, removing the eggs from the laying room without much breakage; and fifth, getting the eggs on to the grader automatically without injury.

Here is his solution. Two rows of metal lined nests were installed on each floor. The rows of nests were back to back with a belt conveyor between them. The metal nest linings were curved and sloped toward an opening leading onto the conveyor belt. In this way, eggs roll onto the conveyor as soon as they are laid.

Each of the three floors has the same arrangement. The belt conveyor on each floor is operated by its own ¼ hp motor controlled from the grading room. All three conveyors deliver the eggs to the same elevator—one floor at a time.

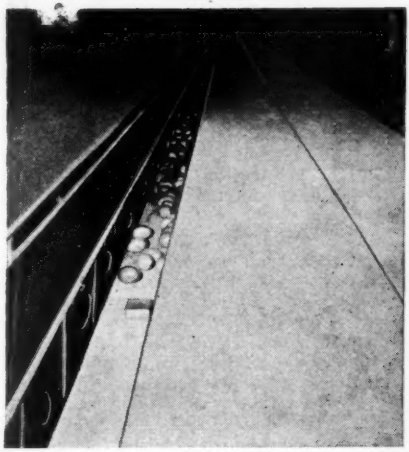
The elevator is the cleverest arrangement of all. Powered by a ¼ hp motor, it consists of a series of egg carriers supported by continuous roller chains.


EGGS ROLL FROM FRONT OF ONE SUPPORT TO BACK OF NEXT
3RD FL.
EGGS ONTO ELEVATOR
EGGS OFF ELEVATOR
2ND FL.
2ND FL. EGG GRADING MACHINE
1ST FL.

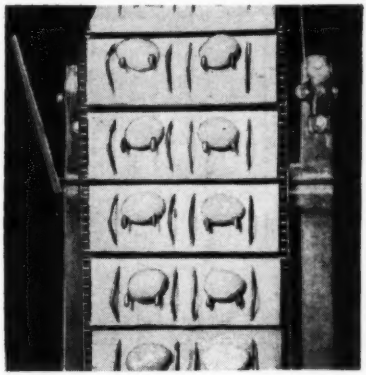
Above: How Archie Coll's egg collector works. At the time indicated by the drawing, the eggs have been collected from the first and second floors. The eggs from the third floor are just going onto the elevator. **Right:** Here are the nests. Curved bottoms slant toward rear. A small amount of nesting straw was used at the start. After ten days it is not needed. Chicken wire prevents birds from getting at eggs on conveyor belt.

†Mr. Bodwell is Director of Rural Service, New Hampshire Electric Company, Portsmouth, New Hampshire.

When it passes through the second floor's egg grading room where the eggs are removed, the elevator goes diagonally down to the first floor. Here it rises vertically past the ends of the conveyors located on each floor. At the top of the building, the elevator goes over an idler and travels about 15 feet at a very slight decline from the horizontal. During this time, the eggs roll from the front of one egg carrier to the back or the carrier ahead. Then the elevator descends vertically through the egg grading room. As the eggs are supported at the ends, a simple wire finger removes them from the elevator as it passes the grader. The grading operation is automatic as the eggs come off the elevator.



Left: The two rows of nests, one each floor, back up to a conveyor belt. At egg collecting time belt is started, taking eggs to elevator. **Below:** Close up of elevator sections. Notice how eggs are supported at ends. These supports pass by the wire finger which removes the eggs at the grading machine.

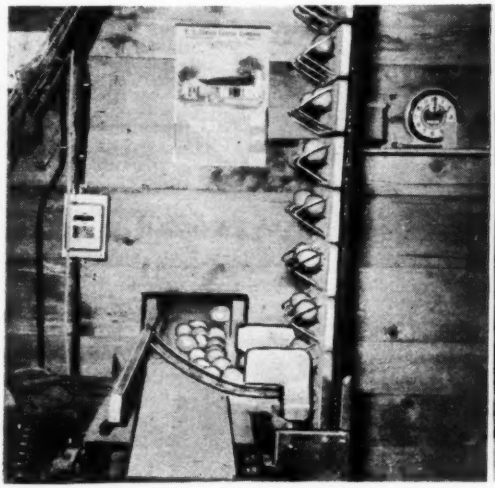


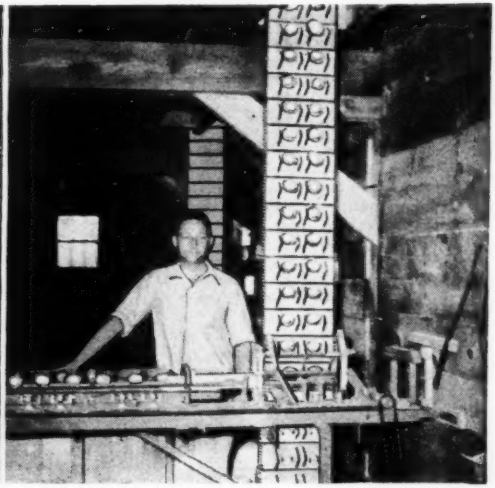
Costs for this installation are not available. Materials on hand were used wherever possible. Parts of the equipment were altered or replaced during its development. However, Mr. Coll believes the costs will not be out of line for commercial purposes.

The operational cost is that of two ¼ hp motors running three hours daily. That is between 3 and 4 kw hr. The elevator runs continuously during the collecting process, but only one egg conveyor runs at a time. The labor saved amounted to one man's time or ⅓ of the former egg collecting costs. That is approximately $200.00 per month.

Archie says it would be hard and costly to run his poultry plant without the aid of his mechanical helpers. But good management and a good breeding and feeding program are still needed. The type of bird which produces high quality eggs and meat must be grown. It is from these that a profit is realized.

Left: Eggs feed directly from belt to elevator, one floor at a time. Curved arm sweeps eggs into loading position. **Right:** Mr. Coll at the grading machine in his new all electric laying house. Here the eggs automatically leave the elevator. Empty sections continue on down to first floor. They are loaded as they pass up by the conveyor belts. Elevator can be seen moving upwards behind Mr. Coll.



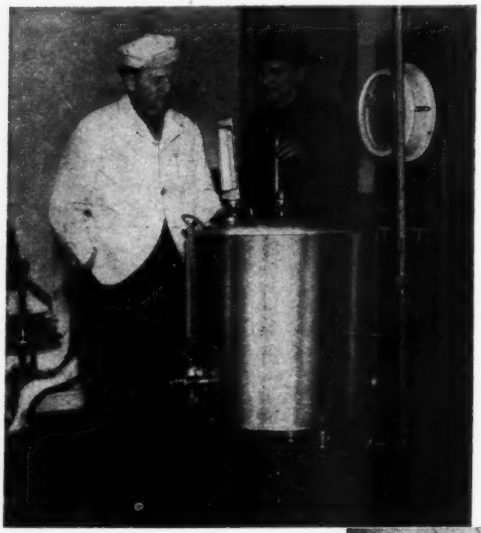


All-Electric Pasteurizer Fills the Bill

By F. C. HOOSER
and R. C. WILTON
Appalachian Electric Power Co.

Henry C. Pyles of Bobs Branch Road in Huntington, West Virginia, produces Grade A milk. He operates a retail milk route, but up until a year ago his milk was not pasteurized. As Mr. Pyles began to lose customers, he became worried. Doctors were recommending that families give their children nothing but pasteurized milk. And he didn't have a pasteurizer.

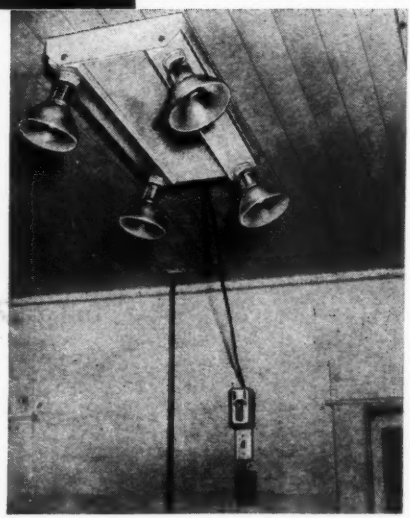
It was suggested that he sell his raw milk wholesale to one of the local pasteurization plants and then buy pasteurized milk for delivery to his customers. This, of course, would have resulted in a considerable loss of profit to Mr. Pyles. It would also have meant the inconvenience of extra hauling and handling. So he looked into the installation of a pasteurizer operated by a gas heated steam boiler. However, the cost of this type of equipment discouraged its installation.



A short time later, Mr. Pyles was having a milkhouse heating unit installed and the subject of pasteurization was brought up. Up until then, Mr. Pyles had never heard of an all-electric pasteurizer. The idea interested him and he investigated the possibility. After learning that the all-electric pasteurizer passed the requirements of both the state and federal health authorities, he went ahead with the installation. It was the first unit of this type to be installed in that area.

The capacity of this pasteurizer is 50 gallons. All of its parts which come in contact with milk, are made of stainless steel. The inner tank, in which the milk is heated, is seamless. There are no cracks or crevices to collect milkstone, etc. An outer tank, which is filled with water, surrounds the inner tank. The water is heated by two 6000 watt heating elements. It is sprayed against the outside of the inner tank by a spray pump.

After the milk has reached 143°, which takes approximately 19 minutes, it is held at this temperature for 30 minutes. When the 30 minute holding period is over, the spray pump stops operating and the hot water is drained off. Cold water is then pumped into the water jacket and is kept circulating until the milk is cooled to the bottling temperature of 44°. Well water may be used for this cooling, but Mr. Pyles installed a six can milk cooling tank through which he recirculates the cooling water. The cooler enables him to provide a continuous flow of 35° water which reduces the time required to cool the pasteurized milk. It takes only



Above: Cover picture—Here is Mr. Pyles (left) discussing the operation of his new all-electric pasteurizer with F. C. Hooser, Power Company Representative. The circular, enclosed case behind Mr. Hooser contains the recording thermometer for the pasteurizing unit. Water gauge glass and water inlets to the outer tank can be seen near the bottom of the tank. Milk outlet is at left in front of Mr. Pyles. The motor, under Mr. Hooser's left arm, operates the propeller type agitator. **Right:** This is the infra-red milkhouse heating unit which indirectly led to Mr. Pyles' installation of the all-electric pasteurizer. The thermostat which controls its operation can be seen mounted on the wall. The four lamps have a total of 1,000 watts. The unit can be turned on for continuous operation to provide additional heat while the men are working in the milk room. At other times it is set to maintain a lower, protective, temperature. This keeps exposed pipes from freezing.

about twenty-five minutes to reduce the temperature of the milk from 143° to 44°. The cooler also allows the water to be recirculated which means quite a water saving.

A stainless steel, propeller type, agitator is operated throughout these processes. This insures uniform temperatures throughout the milk.

The new pasteurizing equipment cost approximately $1200. To this must be added the cost of two pumps and the six-can milk cooler. However, equipment with the same capacity operated by other methods would have cost between $2600 and $3000. That makes quite a saving.

Over and above this fact, electrical pasteurization is safe. It is done without steam pressure and there are no explosion dangers. It is clean and economical to operate.

Mr. Pyles states that "If the retail producers are to stay in the retail business, a pasteurizer is a *must* in their milkhouse. I bought my electric pasteurizer as an insurance against losing my present retail customers, and also to gain back the ones I have already lost. It's safe, clean and dependable, and the installation cost is low".

Although the capacity of this pasteurizer is 50 gallons, it may be used for as small an amount as 20 gallons. Mr. Pyles started out pasteurizing approximately 25 gallons of milk at a time. In this way, he was able to offer his customers the choice of pasteurized or raw milk. It also enabled him to contact his former customers so that he might regain their patronage.

A herd of from 40 to 45 cows is maintained on the Pyles' farm and from 28 to 32 head kept in production. Two hay driers are in use on the farm to provide the herd with top quality roughage. In the milkhouse, Mr. Pyles has many others uses for electricity. Included are a 1 hp walk-in cooler, a ½ hp refrigerated locker for cheese and butter, a 50-gallon electric water heater, along with a cream separator, bottle washer, heater, and water system. Future plans call for the addition of an electrically operated cabinet model sterilizer. This will be used for milk bottles, cans, and utensils.

Keep Your Electric Drill Busy

There Are Many Tasks Which This Versatile Tool Can Simplify

Many farmers think they cannot economically justify the purchase of an electric drill. They may be right. There could be months in which the drill would hang unused in the shop. And pride of possession is a poor return on an investment.

To justify the purchase of production equipment, it must be made to produce. How can the productive usefulness of a drill be extended? Simply by utilizing its versatility.

Essentially, the larger electric drills are motors with a slow speed power-take-off. How many times have you wanted to operate some slow speed piece of equipment? Such items as a grindstone, a seed treating barrel, a small feed mixer, a sausage grinder, an ice-cream freezer? An electric drill on the end of a pulley shaft will do any of these jobs.

In the shop, besides drilling holes, the electric drill can be used for sanding, polishing or buffing. Attachments are available with which the drill may be used as a circular saw, a power hammer, or a hack saw. An "L" shaped rod, fastened in the chuck, makes a good paint stirrer.

When loaded, the litter carrier in the barn is heavy. Put the drill to work here. Let it operate the chain hoist. Wagon unloaders are now on the market, which are powered by an electric drill. A small portable elevator could be operated by an electric drill.

One man has used an electric drill to clean out an old water pipe line. He used a homemade bit attached to the end of a small diameter pipe. Successive lengths of pipe were added to the first as the bit progressed. The pipe line did not have to be dug up. The electric drill rotated the bit with no trouble.

Look over the list. If there are several uses which fit your needs you can probably afford to buy an electric drill. If you have used one for other purposes than those listed, tell us about them.

"Electricity is so cheap I can't afford not to use it," comments Henry Strothmann, Jackson County, Illinois farmer. Here, he and his son, Eddie, are building a portable corn elevator. As you can see, electricity is playing its part in the construction. When finished, a ¾ hp motor will operate it. The elevator, made from poplar lumber, is about 18 inches wide and some 20 feet long. Two men, one at each end, can carry it easily.

Vacuum Lines Need Cleaning

A Four Times a Year Job That Shouldn't be Overlooked

I. E. PARKIN†

Many milking machines are not operating properly because the vacuum lines are partially clogged. Such material as bedding, soiled and otherwise, hair, rust, milk, scale, dust from

feed, lime and super-phosphate may be sucked into the vacuum line during the routine of milking. If this contamination were removed, many milking machine problems would be solved.

To keep your vacuum lines in proper shape, they should be cleaned at least four times each year. Of course the line should be cleaned immediately if milk has been sucked in. Here is the proper way to clean and flush the vacuum line.

Step 1. If your machine has a magnetic unit, remove the pulso magnet from the end of the stanchion hose.

Step 2. Pour hot water into a pail. The amount should not exceed two-thirds of the capacity of the sanitary trap on your milker. Add to this a small quantity of a wetting agent or a good dairy washing powder or liquid. Mix it thoroughly.

Step 3. With the milking machine pump operating, suck this washing solution through the stanchion hose into the far end of each vacuum line.

Step 4. Shut the machine off and remove the sanitary trap from the line. On some machines, the sanitary trap, in the form of a tank, is located below the motor and pump. Remove the drain plug to draw out the washing solution.

Step 5. Dispose of the washing solution. Discard it outside your barn.

Step 6. Return the sanitary trap to the line.

Step 7. Mix a lye solution: one can of lye dissolved in hot water in an amount not to exceed two-thirds of the sanitary trap capacity. CAUTION: Use lye with care. It can burn the skin.

Step 8. Start the milking machine pump and suck the lye through the stanchion hose at the stall cock nearest the vacuum pump.

Step 9. Shut off the milking machine and remove the sanitary trap. Pour the lye solution back into the pail. Replace the sanitary trap in the line, start the pump again and repeat the process at the next stall cock. Continue this step until the lye solution has been drawn through each stall cock on the system.

Step 10. Dispose of the lye solution outside the barn. Do not pour it into the gutter.

Step 11. Pour clean, hot water into a pail in an amount not to exceed two-thirds of the capacity of the sanitary trap. This is sufficient to flush four stall cocks.

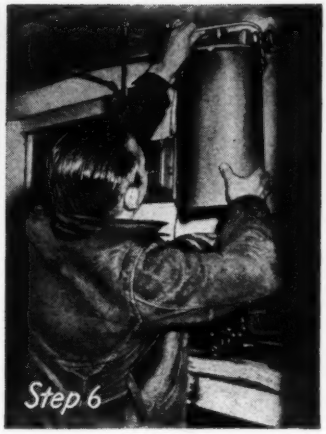
Step 12. With the milking machine pump running, start at the stall cock nearest to the vacuum pump and proceed out toward the end of the line. Draw one-fourth of the clear hot water into each of the first four stall-cocks. Shut off the pump, remove the sanitary trap and dispose of this water. Then replace the sanitary trap in the line and with fresh hot water, flush the next four stall-cocks, repeating the process until all the line has been flushed.

Step 13. When the complete

system has been flushed, leave the sanitary trap down and open all stall cocks so that air may circulate through the line to dry the system.

Contamination of the vacuum

†Mr. Parkin is extension Dairy Specialist, Pennsylvania State College.



line may be reduced by observing several good practices while milking.

Do not raise dust in the barn by feeding, bedding, or sweeping before or during the operation of the milking machine.

Attach machines to properly prepared, cleaned udders only. As you attach the teat cups, do not allow bedding to be sucked into the machine.

Do not suck milky rinse water into the line.

Do not use leaky inflations. Use only good clean sound milking machine rubber parts.

Do not fill the milking machine pails more than two-thirds full. Make sure that they are set so that they will not get tipped over.

Put relief valves at the end of the vacuum lines to prevent rust and scale caused by condensation.

Does that sound like a long list? It's not. It simply means that good equipment must be handled properly, if it is to do a good job. And quality is something you can't put into milk. Nature did that. What you can do is to take all necessary precautions to make sure that nature's quality isn't lowered.

Prize Winners

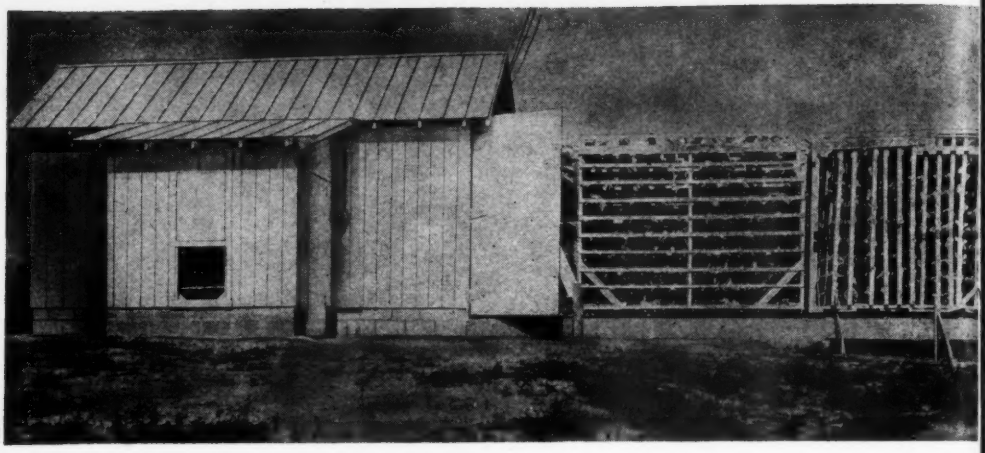
The best letter received on the subject "How electricity has helped to increase my farm income" was sent in by Herman D. Schultz, RFD 1, Danville, Pa. Mr. Schultz will receive the $20 award.

Other excellent letters, for which checks will be mailed, came from K. M. Webb, Allisonia, Va.; Mrs. Orrin Black, St. Jacob, Ill.; Roman Wettstein, R. 1, Eden, Wis.; Mrs. Raymond Kitzman, What Cheer, Iowa; Thornton K. Brown, R.D. 5, Walden, N. Y.

"I believe the radio in the barn, while not unusual, is most effective because it tends to make animals less nervous and fearful."
H. Marohn, RD4, Oshkosh, Wis.

"We extended a light bulb on an extension cord over a tub of water as a trap for June bugs."
D. McPeak, Crivitz, Wis.

Electricity helps you to completely relax in your spare time. This is as important as helping you with chores. Lawrence Puch, a farm boy near Davenport, Iowa, has a hobby in which the entire family shares. Lawrence takes movies of friends, family gatherings, pets and trips. Then with his projector he shows them in the family's recreation room. It's a wonderful way to relive happy times, to introduce new friends, and to show the entire family your visits to far away places.



Close-up view of tobacco barn, showing racks loaded with tobacco on the concrete ramp, and fan house with screened air inlet.

New Crop Plus Better Curing Yields More Profits

By L. L. KOONTZ†

A new agricultural possibility is in the development stages for the small acreage families in the mountain sections of Southwest Virginia. The new crop, Turkish (aromatic) tobacco, is well adapted and gives best results when grown on poor soil. Introduced in Virginia in 1947, it is presently being produced by about 300 growers in nine Southwest Virginia counties.

Years of research by the U.S.D.A. experiment stations throughout the South preceded the decision and demonstration that the new crop could be actually grown commercially and profitably by farmers with poor soil, small acreages and large families. The farmers in the hill counties in Southwest Virginia, who have had little income beyond their corn and apples, are finding they can greatly step up their net cash income with the new crop.

A ready market exists for this tobacco. Cigarette manufacturers in the United States use about $80,000,000 annually, for blending with domestic tobacco. Only about $1,000,000 is being produced in this country—the remainder being imported from Turkey, Greece, Bulgaria and Soviet Russia. The price paid for the aromatic leaf varies from about twenty-five cents to $1.25 per pound, depending on the quality of the finished product. This quality is greatly influenced by the farmer's success in curing the crop. Obviously, proper curing pays the farmer attractive dividends.

The new crop is easy to grow but, at present, involves considerable hand labor and difficulty in curing. The plants are hand set. The rows are about twenty inches apart and the plants are four to five inches apart in the row. Approximately 60,000 plants are required to set out one acre. The leaves are harvested by a process called priming. This process consists of picking a few leaves, one to six at a time, beginning at the bottom of the stock and progressing upward as the leaves mature or ripen. Priming usually starts about forty-five days after the plants are set out. It must be repeated every four to eight days, as new leaves mature. There are usually six primings to the crop.

After the leaves are primed from the stock, they are strung on either string or wire and placed on racks. The racks, loaded with tobacco, are kept in the shade during the wilting period of three to six days. After this the tobacco is ready to be cured or dried. The conventional method consists of rolling the racks outside during the day when the sun is shining. They are rolled back inside at night. This method depends entirely on how much the sun shines and how hot it is. Often, with this method, the leaves will sweat, mold, turn black and seem to burn. This results in a poor quality of tobacco and a much lower price.

The definite need for an improved method of curing resulted in the building of an experimental curing barn. Agri-

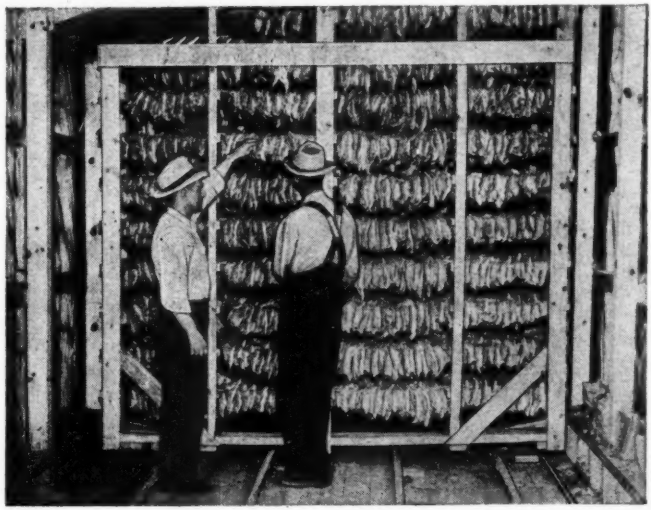
†Mr. Koontz is System Rural Supervisor, Appalachian Electric Power Co., Roanoke, Virginia.

ltural engineers of the Appala-
ian Electric Power Company,
operating with engineers from
e Virginia Extension Service,
signed the building. They re-
d heavily on their experience
ined in the drying of hay.
nds for the experimental barn
re provided by the Production
d Marketing Administration,
d the Southeastern Aromatic
bacco Importers of Anderson,
uth Carolina, underwrote the
lue of the tobacco crop in-
lved. R. L. Shaw, a Turkish
bacco specialist in the Exten-
n Service, supervised the ex-
riment.

The experimental curing barn,
0x20 feet was built on the Troy
sborne Farm near Independ-
ce, Virginia, in Grayson Coun-
. It was designed to handle
out ¾ of an acre of Turkish
bacco. A 10x20-foot wilting
d stringing shed was provided
one side of the barn and a
6-foot shed to house the mo-
r, fan and control equipment
s built on the other side.

The equipment for curing
nsists of a twenty-four-inch
opeller type fan, driven by a
e-horsepower single phase
ectric motor. Two finned elec-
ic heaters, one 2000 watts and
e 3000 watts, are used to heat
e air delivered by the fan. The
ntrols for this equipment con-
st of an overload switch for
e motor, a magnetic contactor
turn the heaters on and off
d a waffle type thermostat.
he thermostat, controlled by
e temperature in the barn,
perates the
agnetic con-
ctor. The fan
ns continu-
sly while the
bacco is in
e barn and
e heaters cut
n and off
utomatically
maintain the
esired tem-
erature.
The heaters
re mounted in
he duct so that
he air from
he fan passes
ver them be-
re going into
he curing
arn. To make
sure that the air is evenly distributed, a static pressure is built up in the air chamber under the floor of the barn. From here the air escapes upward through four ¾-inch cracks running the full length of the barn. Baffle boards are mounted over these cracks to disperse the air as it enters the curing area.

A plywood air-collection duct is built in the top of the barn to collect the heated air and return it to the fan room from which it is recirculated. The humidity is controlled by regulating the amount of air recirculated, the amount of outside air admitted to the fan, and the amount of used air discharged from the building. This is done by manual adjustment of vent doors.



Interior view of tobacco barn with Fred Bennington, A.E.P. Company area representative, and Troy Osborne, Farm owner, inspecting a rack of tobacco in the experimental barn. Note the baffled air-discharge cracks in floor, the aluminum foil insulation on walls, and the plywood air collection, and return duct in top of barn.

The barn was insulated by covering the inside with aluminum building paper. The bright aluminum surface reflects the heat inward and keeps it from escaping through the walls of the barn. The motor is equipped with a 3½-inch pulley and the fan with pulleys ranging in size from three to five inches. This combination of pulleys allows the amount of air discharged by the fan to be varied between 3200 and 7000 cubic feet per minute. Static pressure in the air chamber beneath the floor varies from .06 inches at the

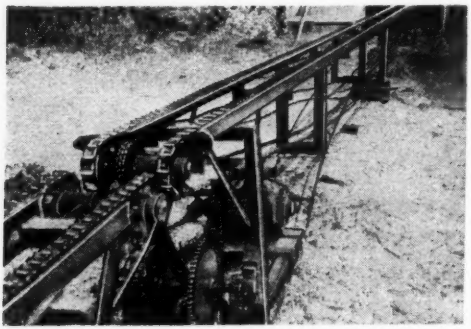
. . . . . (More on page 34)

Interior of fan house, showing W. C. Buchanan, A.E.P. Company Agricultural Engineer, making final adjustments on the fan and motor. Electric heaters are mounted in the plywood duct. The heating chamber has sheetrock lining for fire protection.

Electric Power Saves Labor in Handling Sweet Potatoes

By TRUMAN E. HIENTON†

Saving labor in doing farm work is of increasing concern to farm operators as available labor is recruited for factory jobs or service in the armed forces. Electric motors are used extensively on the P. D. Fulwood farm near Tifton, Georgia, for saving labor and efficient handling of the sweet potato crop. Motors operate fans to ventilate the storage house, drive the conveyor to move crates of potatoes from the storage to sorting shed and return, and provide power for the potato washer and the potato waxer.



The sections are placed end to end to form a continuous line of conveyors. One of the driving units, which are located at one end of each section, can be seen. The motor's speed is reduced through two jack-shafts and the final conveyor-chain drive gives a third speed reduction.

Sweet potatoes, after harvesting, are commonly stored in rectangular, slatted, crates which are well suited to stacking in the storage houses. Overwinter storage has become the usual practice for much of the crop because of good spring demand for sweet potatoes. Storage houses, of the type shown in the accompanying illustration, are divided into five rooms, each with a capacity of about 1,200 crates.

When potatoes are to be marketed, they are moved from the storage to the packing shed, some 80 feet away. There they are sorted, sprouted if necessary, washed and waxed. After repacking in market containe they are usually returned to t storage to be held for shipme The use of sectional horizon conveyors saves a great deal labor in this handling of the p tatoes from storage to pack shed and return.

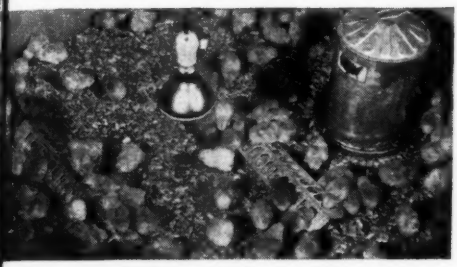
Each of these conveyor s tions is 20 feet long and is driv by a ½ hp motor. Speed red tion is accomplished throu chains and sprockets. The ca of potatoes ride on regular c veyor chains. All of the driv mechanism is located under e end of each section. This allo free delivery at either end a the crates pass along from e section to the next.

There are six of these c veyors, making a total of 1 feet, in use on the Fulwo farm. They are used when truc are unloaded into the storage well as when loaded out of st age. Such equipment, becau of its portability and low op ating cost, may be found pr ticable on many farms whe quantities of baskets, crates, b or bales must be moved fr one location to another.

†Mr. Hienton is Head, Div. of Fa Electrification, BPISAE Ag. Resea Admin., USDA.

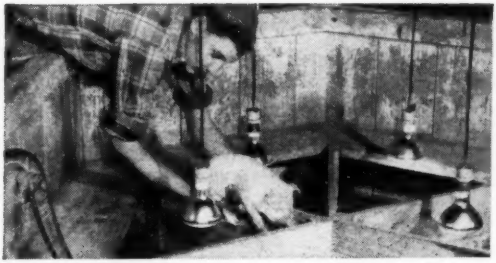
You're right—three men aren't needed to watch each section. But this was picture taking time! The crates ride right into the storage building on the conveyors.

Raise more chicks, pigs, lambs with General Electric infrared brooder lamps



EEPS CHICKS FROM CROWDING, SMOTHERING

u can brood 75 to 100 chicks with one G-E t lamp. Plenty of warmth for all. Chicks are in view for checking. Litter dries rapidly. More cks survive.

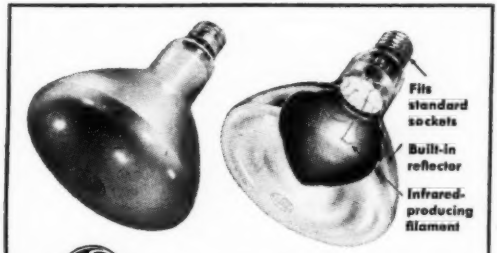


SAVES 1 TO 3 MORE PIGS PER LITTER

To keep pigs from being crushed by sow, put them in boarded-off area, under G-E heat lamp for warmth. Many farmers put a second heat lamp over sow.

MAKES LAMB BROODING SIMPLE AND SAFE

e General Electric heat lamp for two lambs is erage requirement. Lamps are low in cost, easy install and replace, have a long life.



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Hard-Glass Model... $2.95

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ur lamp bulbs in one ckage, 60-watt . **56¢**

uorescent lamp for ol, even lighting. 40- tt **$1.05**

All-Weather projector-flood lamp . . . **$1.55**

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GENERAL ELECTRIC

GEORGE WALLACE KABLE

1888-1950

It is with deepest regret that we announce the death of George Wallace Kable, who has been editor of ELECTRICITY ON THE FARM Magazine since 1937. With his passing the field of rural electrification lost a great leader, a faithful servant, a warm and humble man. Brought up in the small farming community of Shannon, Ill., he lived and worked for the betterment of farming. Throughout his life he governed his work by the question "Will it help the farmer?" The Golden Rule was his chart and compass. That the American farmer be not exploited was one of his basic precepts. George Kable's contributions to agriculture will long be remembered. He personified the ever closer relationship between electricity and agriculture.

According to the records, he was educated at the University of Washington, received a degree of Bachelor of Science in Civil Engineering at the University of California, received a Master's Degree in Agricultural Engineering at the University of Nebraska, and an Agricultural Engineering degree at Iowa State College. But actually, his education never stopped. He had an inquiring mind which never allowed him to accept, without investigation, that which many considered commonplace. Because of this, he was able to change many concepts, which had been accepted dogmatically, and establish new approaches in practical farming methods as well as in research.

Following study at the University of Washington, George Kable served for three years on the Alaska boundary survey. From the University of California where he received his degree in 1914, he went to the New Mexico College of Agriculture and Mechanical Arts. His work there in irrigation was one of his first big contributions. He left the college to manage a large ranch in New Mexico, and from there, went to Oregon as a County Agricultural Agent. The years from 1917 to 1928 established within him a deep love for the Pacific Northwest. After three years as county agent, he became extension agricultural engineer in charge of drainage and land clearing. He was responsible for the distribution of surplus war explosives in that area. Then he became agricultural engineer for the Oregon Experiment Station. The basic research done there on electric brooding was typical of George Kable's thoroughness. Nights were spent looking up through a transparent floor to find out how the chicks reacted. And when he was through, he knew.

In 1928 he came east to direct the National Rural Electric Project in Maryland. He also directed the research for the National Committee on Relation of Electricity to Agriculture from 1929 to 1933. During this time, the old "Greenbook", still one of the best bibles on the use of electricity on t farm, was compiled by the CRE

From 1934 to 1937, George K ble was the Chief of the Agric tural Engineering Division of t TVA. The original work on m hay finishers was instituted dur his administration.

In 1937, George Kable accep the editorship of ELECTRICI ON THE FARM Magazine, wh position he held until his dea He was a Past-president of American Society of Agricultu Engineers and Chairman of t 1946 National Farm Electrificat Conference. Tribute to his in ence was paid in an award a citation from Epsilon Sigma C National Honorary Extension F ternity, in the following wor "As Editor of ELECTRICITY O THE FARM Magazine you ha insisted that only practical applic tions of electricity to agriculture given publicity and that the farm be not exploited . . . since you ha served as President of the Ame can Society of Agricultural En neers, this award to you may a be taken as an honor to that p fession".

The record of George Kable closed. Wherever agricultural e gineers and men in the field rural electrification gather, ho ever, his contributions will not forgotten and memory of asso ations with him will be a livi challenge to us all.

Starting Aids for Cold Weather

Electrical Aids Ease Cold Morning Starting of Cars, Tractors.

When the mercury is way down where it doesn't belong, that automobile or tractor engine may not feel like starting. And working on a cold motor can make it seem as though you have ten thumbs—all frozen. Here are some of the electrical answers for mid-summer starts on mid-winter mornings:

Battery Chargers

First, it is important to have a battery that is fully charged. There are battery chargers that will slowly build up a weakened battery in about 24 hours. You can also get a model that will fully charge a battery in about half of that time. The first type is less expensive and is excellent for farm battery maintenance. The price of this equipment will range between $20 and $30.

At zero degrees fahrenheit a cold inactive battery may lose as much as 60 percent of the starting power it has in the summer. By connecting the charger a half hour before starting the motor, the battery is warmed up and full power is available. Or you may use a unit known as a battery "Vitalizer." These portable units are hung from the steering wheel of the car. They have two cords, one of which is plugged into a regular 110 volt outlet. The other is plugged into the cigarette lighter socket on the dashboard. This equipment keeps up the chemical activity in the battery. It maintains full energy and makes it available, regardless of the temperature. There are two models, one for cars with a positive grounded electrical system and one for those with a negative grounded electrical system. The price is approximately $10.00.

Motor Heaters

Engine heaters are another type of equipment that is fast gaining in popularity. These consist of a heating unit that is easily and permanently installed in the motor. A cord plug extends out

WHO MILKS MOST OF AMERICA'S BEST COWS?

1950 Eastern States Exposition Springfield, Mass.

HOW MILKED	PORTION OF ALL HERDS
1. DE LAVAL MILKERS	65.2%
2. Milking Machine "A"	21.7%
3. Milking Machine "B"	4.3%
4. Milking Machine "C"	2.9%
5. Milking Machine "D"	2.9%
6. Milking Machine "E"	1.4%
7. Milking Machine "F"	1.4%
8. Milking Machine "G"	0.0%
9. Milking Machine "H"	0.0%
10. Milking Machine "I"	0.0%
11. Milking Machine "J"	0.0%
12. Milking Machine "K"	0.0%

1950 Nat'l Dairy Cattle Congress Waterloo, Iowa

HOW MILKED	PORTION OF ALL HERDS
1. DE LAVAL MILKERS	47.6%
2. Milking Machine "A"	28.6%
3. Milking Machine "G"	8.7%
4. Milking Machine "H"	3.9%
5. Milking Machine "J"	3.2%
6. Milking Machine "B"	2.4%
7. Milking Machine "E"	1.6%
8. Milking Machine "K"	1.6%
9. Milking Machine "I"	0.8%
10. Milking Machine "D"	0.8%
11. Milking Machine "F"	0.8%
12. Milking Machine "C"	0.0%

1950 Ohio State Fair Columbus, Ohio

HOW MILKED	*PORTION OF ALL HERDS
1. DE LAVAL MILKERS	44.4%
2. Milking Machine "A"	28.4%
3. Milking Machine "B"	8.6%
4. Milking Machine "G"	6.2%
5. Milking Machine "J"	4.4%
6. Milking Machine "H"	3.7%
7. Milking Machine "C"	1.2%
8. Milking Machine "D"	1.2%
9. Milking Machine "I"	1.2%
10. Milking Machine "E"	0.0%
11. Milking Machine "F"	0.0%
12. Milking Machine "K"	0.0%

*At this Fair, 48 additional herds were exhibited but their owners could not be contacted.

1950 Internat'l Dairy Exposition Indianapolis, Ind.

HOW MILKED	PORTION OF ALL HERDS
1. DE LAVAL MILKERS	45.3%
2. Milking Machine "A"	29.3%
3. Milking Machine "B"	6.6%
4. Milking Machine "G"	6.1%
5. Milking Machine "J"	3.8%
6. Milking Machine "E"	2.8%
7. Milking Machine "H"	1.9%
8. Milking Machine "K"	1.4%
9. Milking Machine "I"	1.4%
10. Milking Machine "D"	0.9%
11. Milking Machine "F"	0.5%
12. Milking Machine "C"	0.0%

At the four great farm shows listed above representatives of the famous dairy herds of all breeds being shown were asked what make of milker they used on the home farm.

The conclusions are evident: De Laval milks the largest percentage by far. It is the "Milker of Champions" selected to milk most of America's best cows for only one reason—Better Milking.

Your herd will do better with De Laval Better Milking, too. See your De Laval Dealer today.

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De Laval Sterling Speedette Milker • De Laval Combine Milking Systems

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through the grill or other opening to a point easily reached with an extension cord. By plugging in an extension cord anywhere from a half-hour to an hour before starting, the motor is warmed, the oil flows readily, and starting is a quick, simple task. These heaters range upwards in price from about $10.

If the car is garaged in a good tight insulated building, such a farm shop, thermostatically controlled electric space heat can maintain above freez temperature. The cost of t type of equipment is about $

Anyone of these pieces equipment can help to ease c morning starting. A combi tion of them can make it a pleasure.

Selecting Automatic Shutters for Ventilating Fans

By J. B. STERE

Automatic shutters are becoming an essential part of a farm building ventilating system. The use of larger fans, shut-off thermostats, and the elimination of exhaust ducts make it important that the fan opening be automatically closed when the fan stops. Automatic shutters are another precaution against drafts.

The main points to look for in selecting and installing shutters are:

1. Select them large enough. The minimum size should be equal to the largest end of the tapered opening to the fan blades. (This is called the bell approach.) From the accompanying chart it can be seen th it is not enough to select sh ters the same size as the blad

2. Select shutters construct of corrosive resistant material light weight.

3. Install shutters inside building. When shutters are proper size, as noted from t chart, there is little differen between inside and outside i stallations as to their effect air delivery. Inside installatio are recommended, however, a protection against freezing. install shutters inside of a bui ing it is usually necessary construct a tight wooden fra around the fan to support t shutters.

EFFECT OF SHUTTERS ON AIR DELIVERY
(A 16" FAN AT 868 RPM WAS USED IN EACH TEST)

SHUTTER SIZE & LOCATION	AIR DELIVERY	LOSS OF AIR IN %
FREE DELIVERY	1888 CFM	—
18¾"×18¾" (INSIDE)*	1715 CFM	9%
18¾"×18¾" (OUTSIDE)	1692 CFM	10%
17"×17" (OUTSIDE)	1559 CFM	17%
13¼"×15" (OUTSIDE)	1293 CFM	31%

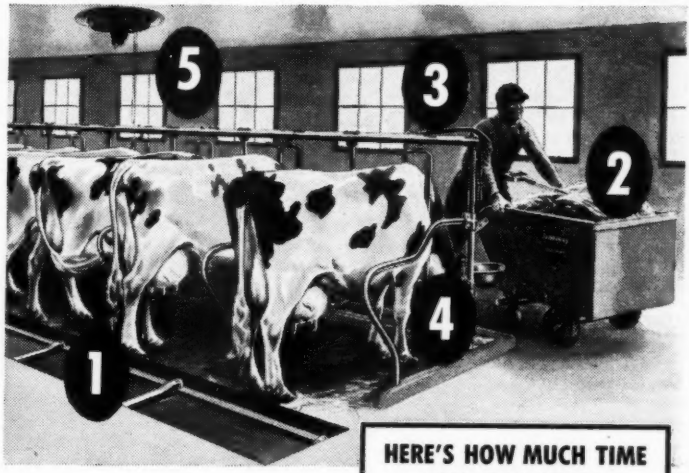
* (INSIDE) OF STABLE SHUTTERS ARE ON SUCTION SIDE OF FAN
(OUTSIDE) " " " " " DISCHARGE " " "

Mr. Dairyman—Do You Need a Helper?

The electric hired hand has been taught to do practically all the irksome chores on the farm faster and cheaper than man. On dairy farms, this hired man will keep the animals supplied with water, cut and grind their feed, milk the cows, separate and refrigerate the mi wash the milk bottles, heat t water and sterilize the dairy equi ment. It will even groom the c tle, operate the ventilating f and furnish a safe steady light evening chores.

TOO many folks swear off on New Year's and AFTER that swear off—and on . . . . About that whistle at the railroad crossing: STOP if YOU'VE heard THAT one . . . . Then there was the seasick passenger who asked to have his NEXT meal served with an ANCHOR on it . . . . FORTUNE HUNTER: a fellow who courts a gal for her PA value . . . . A quick look in at a public dance t'other night indicated to us that the FORWARD type of gal seems to be COMING BACK . . . . POLITICIAN'S SLOGAN: "NEVER go back on a friend—as LONG as YOU can USE him to ADVANTAGE." . . . . EVERSTOP-TOTHINK?—You should NEVER trust a woman who tells you her age—any woman who would tell THAT would tell ANYTHING . . . . How OLD can a joke be? Here's one from THE FOOLISH DICTIONARY. 1906: PAWNBROKER—a MERCENARY man to whom MONEY is the one redeeming quality . . . . CHEAP POLITICIAN: there AIN'T no sech thing . . . . COLD FEET: an ailment you get when you know what the consequences are going to be . . . . ADVICE TO MODERN MOTORISTS—If you MUST speed, wear a soft felt hat to protect the ears when plunging through the windshield . . . . The Russians surely were appreciative of our LEND-LEASE. Right now they're paying us back to the tune of "TANKS FOR THE MEMORY." . . . . Reminds us of the story of the Russian genius who got hold of an American mail order catalog. "Oh, boy!" he exclaimed in great glee, "LOOK at ALL those WONDERFUL things to INVENT." . . . . BALDNESS: a CRISIS coming to a HEAD . . . . Strictly BROOKLYNESE: GOITER—a steel beam in a building . . . . OLD-SAW-WITH-NEW-TEETH DEPT.: "'Tis BETTER to have loved—and LOST TRACK." . . . . Remember the "Little Willies"?—this'n is our favorite: "Willie and two OTHER brats LICKED up ALL the 'ROUGH ON RATS.' Father said, when mother cried, 'NEVER mind—THEY'LL DIE OUTSIDE.'" . . . . From PATHFINDER via QUOTE: "The WISE candidate will CULTIVATE the farmers—but the FOOLISH will only HARROW them." . . . . SARGE: "WHY is it important NOT to lose your head in an attack?" NEW RECRUIT: "Because, sir, I would have NO place to put my helmet."—DUFFY.

Cut Chore-Time Drudgery up to 3 HOURS A DAY with Jamesway



Yes, now you can save up to 3 hours every day of the year with Jamesway's modern, time-saving equipment. It takes the hard, back-breaking work out of your chores. Makes it easier for you to give your herd extra attention. Helps you produce more milk, cleaner milk . . . increase your dairy profits.

Stop in and see your Jamesway Dealer the next time you are in town. Find out how easy it is to modernize your barn with Jamesway plans and equipment. Mail coupon below for free time-saving folders.

HERE'S HOW MUCH TIME YOU CAN SAVE!

1. **Up to 1½ HOURS** with Jamesway Barn Cleaner
2. **Up to 30 MINUTES** with Jamesway Feed Truck
3. **Up to 30 MINUTES** with Jamesway Stanchions
4. **Up to 30 MINUTES** with Jamesway Water Cups
5. **Up to 15 MINUTES** with Jamesway ventilation

See the Sensational NEW Jamesway Barn Cleaner with Patented Shuttle Action

New, sensational, pull-push barn cleaner frees you of daily barn drudgery! No more scooping, scraping . . . heavy lifting! With the Jamesway Barn Cleaner, you just flip the switch!

It cleans your barn cleaner. Amazing new shuttle action whisks manure from gutter *straight* to spreader. No endless gutter chains to wear out or break. Cleaning paddles fold against steel gutter bar . . . leave gutter clear when not in use. Ask your dealer for a free demonstration. You'll see why the Jamesway Barn Cleaner is the leader.

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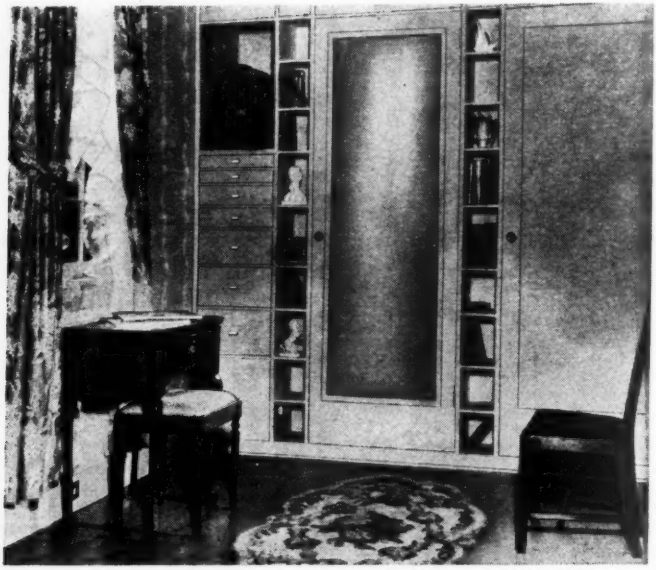
World's Largest Makers of TIME-SAVING EQUIPMENT for Cows, Hens, Hogs

Electrical Housekeeping

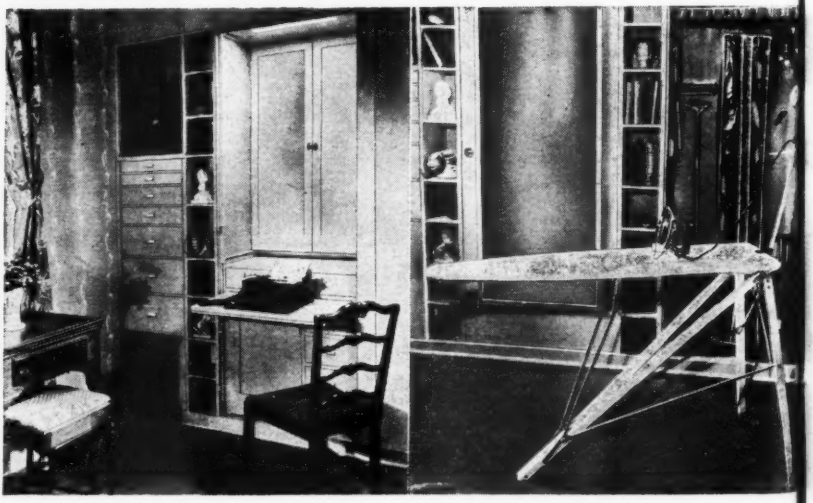
Edited by NAN SHAW, 329 Memorial Union, Ames, Iowa

Ideas for Your Sewing Room and Your Sewing

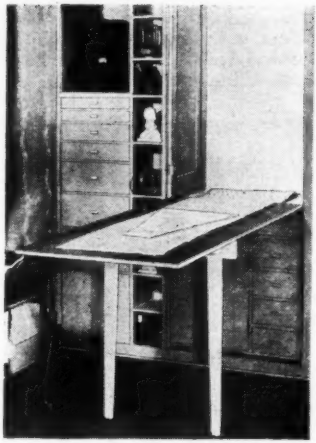


When you learn to sew, the
are a number of tips
help you along. An organize
sewing corner is a great hel
You may spot some ideas in t

Left: For an ideal arrangement, t
sewing machine is in front of the wi
dow for the greatest amount of da
light. The floor is covered with eas
to-clean linoleum. And the wall cabin
contains everything needed when se
ing. It has varied size drawers, a r
cessed desk and cutting table, a goo
sized closet, and a set of double mi
rors (one on inside of closet door n
shown). The cabinet pictured is 8 fe
long and 21 inches deep.
Below: To save steps as you sew an
press, set up the ironing board an
iron against the wall opposite the se
ing machine. The thermostatic contr
allows you to leave the iron plugge
in while you sew. In this way, th
iron is always ready at the right te
perature. The closet offers ample sto
age space for a dress form, garmen
bag, portable vacuum cleaner, iron
and ironing board.



Right: Open the center door of the wall cabinet. Pull out the sliding table and you have a desk, large enough to hold a typewriter. A light is recessed above. There's plenty of storage space for the typewriter and correspondence, or a portable sewing machine as well as sewing supplies, in the cabinet space below the desk. Photos from the Singer Sewing Book by Mary Brooks Picken.



When ready to lay out a pattern or cut material, let down the cutting table. This is concealed back of the doors above the desk in the cabinet. The 28 by 60-inch table is an ideal working surface, 37 inches above the floor. It is covered with light weight linoleum.

pictures presented on these pages.

First of all, know your sewing machine thoroughly. Then you can save yourself a lot of time. Did you know that you can baste material on the machine? This is a valuable time-saver on long seams. To machine baste, adjust the tension to make it very loose and the length of the stitch as long as possible. You can whiz down the seams in no time. If you find you have to adjust any seams, it is simple to clip the thread and re-sew. After checking the basting, readjust the tension and length of stitch to the desired combination for permanent stitching.

The desired combination of tension and length of stitch is determined by the material you are sewing on. If the fabric shirrs or puckers when you pull at the seam, the stitch is probably too loose and needs adjusting. You will find a longer stitch used on heavy fabrics than that used on sheer, more delicate ones. Rayon or wool jersey should be reinforced with double stitching at the seams. Otherwise the material has a tendency to stretch and consequently break the thread. Where a seam is sewn on lace, stitch the seam

. . . . . (More on page 31)

Dishwashers are Labor Savers

"The next thing we want is a dishwasher. What do you think of them and what should we look for?" These questions have been coming to me from so many farm families, I thought you might like some of the answers on automatic dishwashers. I'm firmly convinced that, when carefully purchased from a long-time manufacturer and installed by well trained service men, a dishwasher can be a wonderful labor saver in a farm home.

Estimated Saving One Hour Daily

The Phillip Garners, who farm near Davenport, Iowa. also feel that way about dishwashers. They're now using their second one which is completely automatic. Their first dishwasher, which was not automatic, was used continuously for 8½ years in a small house which the family outgrew. In all that time the only servicing which had been required was one new gasket for the lid.

It is estimated that a dishwasher saves a homemaker at least 1 hour a day. Let this accumulate for a year and it adds up to 6 weeks of 8 hour days. The cleaning up of dishes and pans for daily eating comes up 3 times a day, 90 times a month, and 1095 times a year. It is 10 times the work of the family laundry.

Numerous Models Available

Dishwashers have many years of research and home use to back them up as good time and labor savers. They have been designed so that there is a model to fit into almost anv problem kitchen. They can be had as part of a sink; in combination with a clothes washer; or as a separate unit to be fitted in with or under a continuous counter top.

First, you must decide between a front or top opening model. Consider your height, work counters, and space available in front of the opened door. Dishes are placed in two metal trays which are lifted in and out of top opening dishwashers; trays slide in and out of front opening models. Most models are automatically controlled, although a few can be operated manually. All models can assure good drying. Several types have built-in drying units.

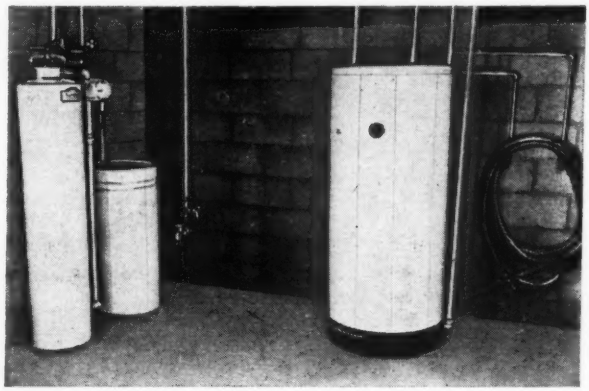
It is important to follow the manufacturer's specific recommendation for installation, water pressure, water, and detergent requirements. An automatic water heater is essential for most dishwasher installations. Good dishwashing is done with soft water at 140° F. Depending upon the model, dishwashers will use 2½ to 8 gallons of water for each load of dishes. They will

Even though the first dishwasher had to be operated manually the Phillip Garner family was completely sold on it and this is how Janet learned to do dishes.

use between 4 and 7 kwhr of electricity a day, depending on whether or not they have heating elements to dry the dishes. Manufacturers recommend certain detergents. These cost a little more than regular soaps but the amount used is small.

Dishwashers really wash pots, pans, and separator parts. Soiled dishes can be stacked throughout the day inside the dishwasher rather than on counter tops. This keeps the kitchen orderly. Dishwashing is done when there is a full load. Any one in the family can add the detergent and start the dishwasher. This is a big help when there are late eaters. They can add their soiled dishes to the loaded trays, add the detergent, push the button, and the dishes are done. A mother can leave the kitchen and put her small children to bed while the dishes are being washed. This allows more time in the evening for parents and older children to be together. In homes with dishwashers, the everyday dishes seldom get stored in dish cupboards because they rotate between table and dishwasher.

Right now with our country going into an all out defense program, we know that seasonal labor to help on the farm will again be scarce. Dishwashers are valuable time and labor savers. Since practically any member of a farm family can manage one, the dishwasher is a piece of equipment that can help to divide up the chores.



Ideal dishwasher companions are an automatic water heater (right) and a water softener. The depressed floor drain comes in handy when flushing the brine tank for the softener. It by-passes the septic tank. This picture was taken in the basement of the recently remodeled Alleman farmhouse in Iowa.

Finding space for a dishwasher in the Garner's new house was not easy. Yet the entire family agreed it was a MUST. The oldest daughter, Janet, not quite ten, finally discovered the way a dishwasher could be installed. The old dining room had been converted to a bedroom. Reach-in storage closets were built along the wall next to the kitchen. "Why," asked Janet, "wouldn't the old dining-room door be wide enough for the dishwasher? It could then be recessed the same depth as the clothes closets." So the old door was removed and some of the bed-room wall storage space was partitioned off. This is now used from the kitchen for the dishwasher and for some dish storage. All Janet has to do with the new automatic dishwasher is push a button.

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Oven Protectors

It's a poor practice to place an aluminum sheet at the bottom of the oven to catch spill-overs on the oven floor, baffle or shelf. The heat of the oven unit will be trapped between the aluminum sheet and the oven lining. This is liable to cause crazing of the enamel. The use of aluminum foil to line the reflector pans of surface units is not recommended either.

Fresh Curtains Tonight

Curtains are a catch-all for both indoor and outdoor fumes and dirt. If not washed frequently, they may become so damaged by soil that they will go into holes in the first washing.

It's no trick at all to wash your curtains. And you can have them back in place in a few hours *if* you direct an electric fan on the stretcher.

First shake the curtains to remove dust and lint; then measure them so they can be stretched to dry evenly and to proper dimensions. Curtains usually have a deep heading or hem. This can be let out if they should shrink a little.

Wash curtains in plenty of mild, tepid suds, using a gentle squeezing action. Rinse them quickly two and three times in clear lukewarm water, pressing the water out carefully after each rinse. Rough handling may tear or pull the fabric. Do not bleach permanently finished curtains.

You can launder curtains in a washer by placing them in a pillow slip or a loosely woven bag.

Dry Wisely—Not Too Well

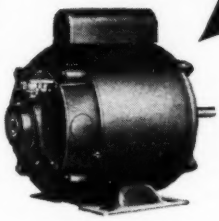
Washing and ironing in one day was formerly considered brave, if somewhat over-zealous. It meant "Early to bed, early to rise, and early to bed." However, with the advent of the automatic clothes dryer, it is now practical and convenient to keep washing and ironing close together and to eliminate the sprinkling process. In fact, sprinkling and prolonged seasoning of articles for ironing is outmoded with dryer owners who learn to remove articles to be ironed when they are at the desired dampness.

"Desired dampness" is the term for your own choice of moisture content for a good ironing job. This individual preference varies widely. As a result each dryer user must experiment to find the drying time she likes best.

Clothes removed from the

Century Electric Motor Power Helps Make Farm Life Easier

Type RS—Repulsion start induction, single phase, brush lifting motor — for applications requiring high starting torque with low starting current. Built in sizes ½ to 20 horsepower.



Type CSH — Capacitor start induction, single phase motor — for high starting torque with normal starting current. Built in sizes from ⅙ to 20 horsepower.

Type SP—Split phase induction single phase motor — for light starting duty. Built in ⅙, ¼, ⅓ horsepower sizes.

CE-661

Hundreds of thousands of Century single phase motors are helping farm families do more work in less time with less human energy. Then, too, electrically powered equipment usually does the job better.

Century motor powered equipment—keeps water ready at the faucet, in the house, barn and feed lot; pumps milk; shells grain; turns tool grinders and workshop machines; operates hay and grain dryers; and takes the hard labor out of dozens of other farm jobs.

For dependable electric motor power insist on Century motors —on new equipment and for replacement. Century motors are available single phase, three phase and direct current up to 400 horsepower.

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Offices and Stock Points in Principal Cities

Century C MOTORS

dryer at desired dampness may be folded conveniently away for ironing, ironed at once, or rolled in a length of plastic and tucked away, preferably in the refrigerator, or other cool place, until they are ironed.

No control in any dryer now being sold can measure the actual dampness of clothes in the dryer. The timer in a dryer gives you a precise choice of any drying time, up to 60 minutes, which is exactly suited to the load you put in the dryer.

A little moistened salt rubbed on the outside of a car windshield is said to prevent snow and ice gathering on it.

Don't let this happen to your child.

YOU think the world of your children, yet you may be exposing them to serious, even fatal, illness every time you give them a glass of milk . . . unless it's pasteurized. Your doctor will tell you that raw milk may contain the disease organisms that cause undulant fever, septic sore throat, typhoid fever, scarlet fever and even dreaded polio.

Milk MUST be pasteurized to make it safe. It's easy to do at home with the HOME HEALTH unit. Automatic . . . laboratory tested . . . guaranteed.

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Write for Free Milk Folder giving facts on milk borne diseases.

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DEPT. "E"
Rochester, Minn.

HOME HEALTH

MILK & CREAM PASTEURIZER

Ironer Stored Under Counter

By **RUTH FOSTER**
County Extension Home Economist
Washington, Iowa

When the William Gamons of Wellman, Iowa, worked their kitchen over to make it more convenient, they planned storage for a clothes ironer too. Their kitchen measures 14′ x 19′. A waist high counter extends like a peninsula from the wall. This adds more work counter space. It also divides the floor space so that part of it is free for eating, ironing, etc. The ironer rolls into storage from the side opposite the cooking area. As she irons, Mrs. Gamon can spread the flat pieces on the peninsula counter top. She can also watch the foods cooking on the range and it's just a step to the telephone. In the summer she can sit in front of an open door and enjoy the outdoor view

as well as a cool breeze. A corner space under cabinets is usually hard to get at. For this reason, the Gamons planned the space to be accessible and adequate for a specified need. This under counter storage keeps the ironer clean, dry, free of dust, and out of the way when not in use.

Hearty Appetites

Hearty appetites? If they're yours to satisfy, then you want dishes with extra steam for your human engines.

These recipes add power to your fall vegetables—and they're GOOD, besides.

Yam Boats

4 yams
⅛ c seedless raisins
1 t salt
¼ sugar
1 T butter or bacon drippings

Bake yams in jackets in moderate oven (350°) about one hour. When done, cut lengthwise and scoop out pulp, being careful not to break shells. Mash pulp; add raisins, salt, sugar and butter. Mix well and pile lightly into potato shells. Brown in hot oven (425°). Serve hot. Makes 4 satisfying servings.

Sweet potatoes are full of carotene but if you peel the potatoes before cooking you lose it. If you bake or boil your sweet potatoes in their skins, they keep their high content of carotene and about 75 percent of their Vitamin C.

Baked Carrots in Cheese

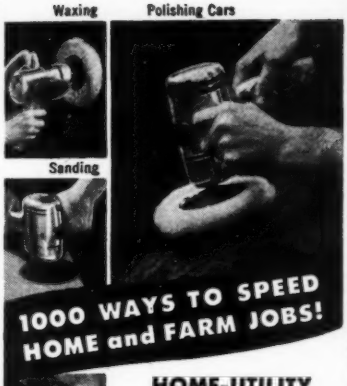
2 tablespoons butter
3 tablespoons flour
½ teaspoon salt
⅛ teaspoon nutmeg
1¼ cups milk
½ lb. process American cheese, diced
3 cups cooked diced carrots
½ recipe Tomato cheese Biscuits

Melt butter in top of double boiler. Remove from heat. Mix flour, salt and nutmeg. Blend into melted butter, stirring until smooth. Gradually add milk, mixing well. Cook over boiling water, stirring constantly, until thickened. Add cheese and cook over hot water, stirring constantly until cheese is melted. Place carrots in greased 1½ quart casserole; add cheese sauce. Top casserole dish with uncooked Tomato Cheese Biscuits. Bake in moderately hot oven (400° F.) 20 to 25 minutes or until golden brown.

Tomato Cheese Biscuits

2 cups sifted flour
3 teaspoons baking powder
1 teaspoon salt
3 tablespoons shortening
1 cup (¼ lb.) grated process American cheese
2 tablespoons chopped parsley
¾ cup tomato juice

Sift together flour, baking powder and salt. Cut in shortening with pastry blender or two knives until mixture resembles corn meal. Cut grated cheese into flour mixture. Add parsley, if desired, and mix well. Stirring with a fork, add enough tomato juice, about ¾ cup, to make a soft dough. Turn out on floured board; knead lightly for ½ minute. Pat dough or roll lightly ½ inch thick; cut with floured 2-inch biscuit cutter. Place on ungreased baking sheet. Bake in hot oven (450° F.) 10 to 12 minutes or until golden brown.



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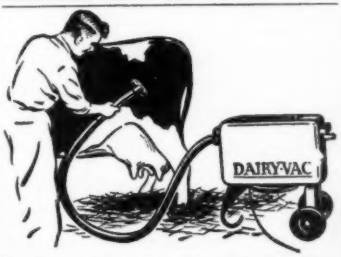


Makes Cattle Comfortable
Removes Irritating Dirt—Lice
SEND FOR NEW FOLDER
DAIRY-VAC PLYMOUTH WISCONSIN

Banana Pie

Want a good dessert you or your youngsters can put together in a hurry? Here's a quick one when you have whipping cream in the refrigerator.

Banana Whipped Cream Pie

4 c corn flakes
½ c melted butter
¼ c sugar

* * * * *

1 c heavy cream
2 T sugar
½ t vanilla
18 marshmallows, sliced
2 to 3 fully ripe bananas

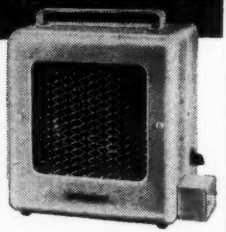
Crush corn flakes into fine crumbs; combine with sugar and melted butter. Mix thoroughly. Press evenly around sides and bottom of 9-inch pie pan. Chill.

Whip cream until stiff; beat in sugar and vanilla. Fold in marshmallows and sliced bananas. Spread in crumb crust. Chill in refrigerator and serve cold.

Makes one 9-inch pie.

It's New! It's Automatic!
It's All-Electric!

ELECTROMODE MILKHOUSE HEATER



Two Models:
1500 Watts
3000 Watts

Install one of these units in your milkhouse and enjoy automatic, fan-circulated warmth for only a few cents a day! With its built-in thermostat, you install it and forget it—for years to come. The Model FA-15 heats areas up to 1500 cubic feet and the Model FA-30 heats areas up to 3000 cubic feet, depending upon your milkhouse construction. Electromode's lifetime heating element is so safe the heater can be used around hay or inflammables where open-wire heaters are not permitted. Factory-sealed motor never needs oiling. Easily installed. Finished in milk-white enamel. Cord and plug extra.

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ELECTROMODE CORP., 45 Crouch St., Rochester 3, N.Y.
Please send me complete information and cost data on Electromode Milkhouse Heaters and name of my nearest dealer. Size of my milkhouse is:_____ Construction is:_____ Is it insulated?_____.
NAME_____
ADDRESS_____

Frozen Steaks Studied

A group of researchers at Kansas State College recently made a study of precooked-frozen, braised beef steaks. They found that, as storage time increased, the desirability of the aroma, fat and lean became lowered.

Here are some other points that were brought out. After 29 weeks, meat that was stored at —10° F was rated higher in desirability of fat than that stored at 0° or 10° above.

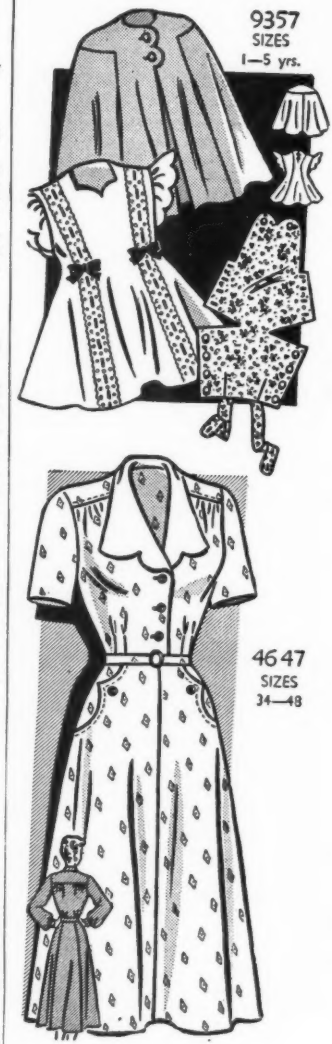
In products stored from 2 to 43 weeks there was little difference in palatability of steaks packaged in a bag of kraft paper laminated to cellophane or in a standard cellophane or pliofilm bag. After 46 weeks the steaks packaged in the kraft paper laminated to cellophane bag received the best palatability score.

Reheating in the double boiler was most desirable from the standpoint of palatability and weight loss. However, heating in the pressure saucepan or the skillet is much faster and also makes a palatable dish. Caution is necessary to avoid scorching when either one of these last two methods is used.

"An electric fan behind my oil heater blows the waves of heat all around the room."
MRS. S. H. PRUITT, Oglethorpe, Ga.

"A rat electrocuter takes very little electricity and does its stuff in rat eradication."
B. CAIN, Box 75, Bonnots Mill, Mo.

GIVE TO THE MARCH OF DIMES



Choice Patterns

9357 — Complete outfit for your toddler! The sunsuit is one piece. Sizes 1-5 years. Size 2 cape, 1¼ yards 39-inch; frock, 1½ yards; sunsuit, ⅞ yard 35-inch fabric.

4647 — Slenderizing frock with scalloped contrasting collar. Sizes 34-48. Size 36 takes 4⅜ yards; ½ yard contrasting 35-inch material.

Send TWENTY-FIVE CENTS (in coins) for each pattern to: ELECTRICITY ON THE FARM, 196, Pattern Department, 243 West 17th Street, New York 11, New York.

MONEY FOR LETTERS That Help Readers

HOW DOES ELECTRICITY HELP YOU THROUGH YOUR WASHDAY? That is the subject for your January letters.

Since farm homes have been electrified, families are doing their laundry indoors where they can plug in the washer and be protected from the weather. The tendency is to set aside special places, other than the kitchen, for the washer and ironing equipment. Favored spots have been the basement, rear hall or enclosed porch. Now, with the advent of automatic washers, dryers and ironers, more laundry is being done in first floor work rooms.

You can avoid much unnecessary fatigue if you reduce the footsteps required between the washing and the kitchen, the telephone, and other errands. Not having to carry water in to or away from the washtubs is probably the greatest back saver for most homemakers. Electricity pumps and heats water for pennies. In some homes with electric ranges that have automatic oven-timers, having a substantial oven meal on time without having to pot-watch helps a lot on washday. In others, getting the dishes done electrically is a lift. In some others, clothes dried on schedule by means of a dryer, fan or furnace is a real labor saver. And even being able to have music and regular radio programs brightens the laundry work in some homes.

We all learn through sharing of ideas. So whatever electricity has done to make your washday easier will be worth sharing with our readers.

For the letter which we think most helpful to other readers, we will pay $10. Any other letters or parts of letters which we print will be paid for at regular space rates.

Send your letter to Nan Shaw, Housekeeping Editor, ELECTRICITY ON THE FARM, 329 Memorial Union, Ames, Iowa. It must reach her by January 31. Letters to be published will be announced in the April issue.

Clean Paper Shades With Skim Milk

Skim milk is a good cleaner for paper lampshades, both those of unfinished paper and those with shellac, varnish or waxlike finish. Using water on paper shades softens the paper and may break or damage the shade. Milk does not penetrate paper readily because of its casein content.

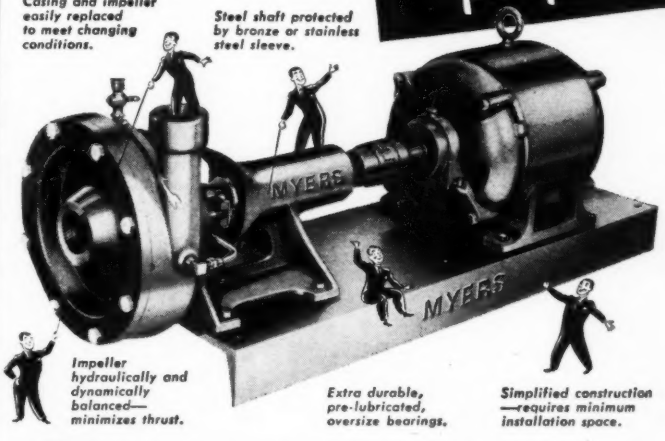
The first step in cleaning is to dust inside and out with a hand vacuum cleaner or a soft clean cloth or brush. Sponge the surface very lightly with a cloth dipped in milk. A large shade will use about a cupful. Support the shade by placing it on a table. Hold it by the top wires, turning it in order not to bend the paper. The milk should not stand on the shade or moisten the glue.

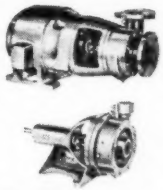
If the milk softens the paper, allow the shade to dry before continuing. A very soiled shade may need a second application after it dries. In shades made of two layers of paper in which soil has seeped in between the layers, cleaning the lining with milk may leave streaks.

RUTH B. COMSTOCK
N.Y. State Ext. Specialist

Steam irons enable you to eliminate the sprinkling of many articles of clothing before ironing. They change ironing from a long process to a simple pick-up task.

YOU CAN SEE THE extra value IN NEW MYERS centrifugal pumps!


Casing and impeller easily replaced to meet changing conditions.
Steel shaft protected by bronze or stainless steel sleeve.
MYERS
MYERS
Impeller hydraulically and dynamically balanced—minimizes thrust.
Extra durable, pre-lubricated, oversize bearings.
Simplified construction—requires minimum installation space.



Direct-connected, motor-mounted and engine-driven models in a wide range of sizes.

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for Junior Partners

Hi

The National 4-H Congress is over for another year. Many of you won awards. But many more of you didn't. Do you wonder if 4-H is worthwhile? Of course it is. The annual awards are a very small part of the whole program. The 4-H is just one part of your training. Training for life. It is not a game.

What you do with your life is your own responsibility. You have your head—your heart—your hands—your health. But how you use them is up to you.

Dewitt Van Noy was just a youth, like yourself, working with and enjoying the companionship of his fellow members in 4-H. He had his projects which he enjoyed and from which he profited. It was fun! But more than fun, it was preparation. Preparation for the stewardship which he assumed on his father's death. No, he had not won any prize. He was just another 4-Her like yourself. But look at what he has done. And what he is doing. Yes, he has won a prize now. But the greatest prize has not been awarded at Chicago. It is there at home where he and his mother carry on that which his father started.

Is 4-H worthwhile? You bet it is.

Kenneth V. Anderson

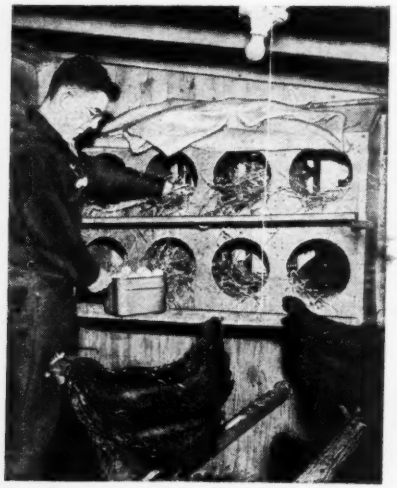
Dewitt's day starts early—Carrying the electric milking machine unit, he trudges into the barn at 5:45 a.m. to begin the day's work. One of his first jobs, more than a year ago, was to wire the barn for electricity. Next on his list for the barn is to put a floodlight out front.

Farm "Boss" at 15

A 15-year-old farm boy of Canandaigua, New York, is proving to his neighbors that the future of American agriculture is in safe hands.

When his father died suddenly, less than two years ago, young Dewitt E. Van Noy—then only 13—shouldered the job of running the family's modest 65-acre farm. Somehow he has found time to keep up in his school work too. With the encouragement, help and sound advice of his mother, Dewitt today is building up the farm. He is in-

Lower left: The Van Noy's 41 hens declare a daily "dividend" which makes the chicken business profitable. Here Dewitt collects eggs which are sold to a local sanitarium as well as to neighbors. At the start of this year, the flock numbered 200. Additional income has been earned from the sale of chickens. **Below:** Each weekday finds Dewitt, a junior, attending high school until 2:30 p.m. Electricity is one of a wide variety of subjects which he studies. Here, industrial arts instructor Floyd Butler checks Dewitt's work on a "return call" wiring hook-up.



Above: Picking up tricks of the trade from others is part of any business success pattern. Dewitt is looking over the prize Guernsey herd of a neighbor who himself was a Westinghouse state winner from Ontario County in 1943. Dairying is the County's number one industry. **Upper right:** There isn't too much time for all the work to be done between school hours and milking time which comes again at 5:15 p.m. "It is almost worth a hired hand to have an electric fence," says Dewitt. "Before we had it, chasing cows was a real job."

stalling new labor-saving electrical equipment as rapidly as the family can afford it. And what is more, he has just won New York state honors in the Westinghouse-sponsored 4-H Farm and Home Electric program.

As a reward for his courage and achievement, he received an all-expense trip to Chicago where he attended the recent 4-H Club Congress.

The Van Noy farm, just twelve miles outside of Canandaigua in New York's fingerlake country, isn't a showplace. But in his short time at the helm, Dewitt has built a good foundation for the future. With his new electric milking machine he is in a position to increase the size of his dairy herd. He has three registered Ayrshires, in addition to seven other milk cows, and is aiming at a pure-bred Ayrshire herd some day. His crops include oats, corn, wheat and hay. A small flock of hens provides additional income. Dewitt raises the chicks with the help of an electric brooder.

Of particular help to Dewitt and his mother, Mrs. Dewitt S. Van Noy, have been Edward W. Cockram, 4-H Club agent for Ontario County, and Carl E. Jeerings, farm service representative of the Rochester Gas and Electric Corporation. Both have provided valuable guidance and assistance in Dewitt's efforts to build up the farm.

After dinner, darkness outside doesn't end the work day. Besides the school homework, Dewitt sometimes helps his mother wrestle with the farm's necessary bookkeeping. Most of this job, of course, is handled by Mrs. Van Noy who was elected Town Clerk this year. In this position she receives a modest salary which helps to make ends meet.

Dewitt receives his 4-H Club Certificate of Completion from County 4-H Club Agent Edward W. Cockram. The Certificate is recognition of his successful completion of 4-H projects during the year. In Dewitt's seven years of 4-H Club work, he has earned in income and capital investment some $16,800.

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Who's Who Electrically in 4-H

Each year, the Westinghouse Electrical Foundation sponsors a 4-H Farm and Home Electric program. On the basis of each participants record, one winner is picked from the various states. General 4-H activities are considered but special emphasis is given to the application of electricity for better farming and better living.

These state winners are awarded free trips to the National 4-H Congress in Chicago. From this group (there were 41 this year—31 boys and 10 girls) six national winners are chosen.

In recognition of their achievement each of these six national winners receives a $300 college scholarship. This is in addition to the free trip provided for all state winners. And this year, as a souvenir of the trip, each boy was given an electric motor. The girls were given an electric iron.

Here are this years national winners and a brief account of their activities.

Donald Anderson, 16, of Edwardsville, Alabama, put electricity to work as soon as it reached his parents' 150-acre farm early this year. He not only completely wired his home, but also built a 50-egg electric incubator, a portable electric motor and a study lamp. His knowledge of electricity has enabled him to help friends and neighbors with their house and barn wiring. He also assisted in wiring two new chicken houses and installing 10 circuits in the incubator-brooder house of the nearby state experiment poultry farm.

David T. Buchman, 17-year-old Owings, Maryland, youth, built an electric butter churn, an electric mower, a knife sharpener, helped build an electric pig brooder and keeps the 39 electrical appliances and machines on the farm and in the home in tip-top shape. David also has given electrical demonstrations at two state fairs, and won the Maryland Utilities Award last year for having the best electrical demonstration.

James F. Fagerskog, 18, of Carmichael, California, furnished proof that a farm doesn't have to be large to take advantage of electricity. He put the electrical servant to work on his parents' 3½ acre farm in the two pig brooders which he built, as well as in the honey extractor which he helped to build. Eighteen-year-old Jimmy also installed lights in the family's rabbitry, and in odd moments he keeps busy repairing motors, radios, lamps and clocks for friends and neighbors.

Charles Hoelscher, 19, of Rowena, Texas, first put an electric motor to work to power the family's washing machine, then installed

Here are the six national winners in the Westinghouse 4-H Farm and Home Electric Program. Left to right: (standing) David T. Buchman, Edward Johnson, Donald Anderson, (seated) Charles Hoelscher, Lottye Betts Rye, and James Fagerskog. The motor is one of the souvenirs presented to the state winners.

one on the milk separator. He remodeled a chicken brooder and cream separator and also has repaired table lamps and installed ceiling lights.

Edward D. Johnson, 16, of Savannah, Georgia, built a chicken brooder as his electrical project. Scrap lumber and used wiring went into a 200-chick brooder that successfully raised 198 of the 200 New Hampshire chicks he put into it. A junior in Savannah High School, Edward has given 13 demonstrations on farm electrification. He lives on a 736-acre farm.

Lottye Betts Rye is an 18-year-old miss from Mississippi who used an old butter churn, an extension cord and a lamp bulb to build an incubator. A 4-H member since 1942, she has helped wire the family's barns, added wiring to her home, planned the new laundry room, repaired appliances, and personally wired two small tenant houses on her parents' 800-acre farm. Just this year she organized a junior electric club in her neighborhood.

Names and Addresses of 4-H Farm and Home Electric Program Winners

State	Name of Winner	Address
*Alabama	Donald Anderson	Edwardsville, R. 1
Arizona	Harriet N. Hussey	Phoenix, R. 3, Box 132
Arkansas	Louise Spray	Sheridan, RFD 1
*California	James F. Fagerskog	Carmichael, R. 2, Box 2270
Colorado	Richard S. Duncan	Yoder
Connecticut	Frank E. Rosseter	Lakeville, Box 56
Florida	Roy L. Heathcoe	Plant City, R. 4, Box 321
*Georgia	Edward Johnson	Savannah, R. #3
Idaho	Harvey E. Dale	Potlatch, RFD 1
Illinois	Gordon H. Schroeder	Bloomington, R. 2
Indiana	Martha Miller	Indianapolis, R. 16, Box 656
Iowa	Franklin A. Fiala	Council Bluffs, RFD 4
Kentucky	Chester Prim	Alexandria, RFD 1
Louisiana	Wanda Lee Jordan	Downsville, R. 2
Maine	William C. Tukey	Oakland, RFD 1
*Maryland	David T. Buchman	Owings, RFD 2
Michigan	Earl F. Beattie	Saranac, RFD 2
Minnesota	Edward C. Frederick	Eagle Lake
*Mississippi	Lottye Betts Rye	Hamilton
Missouri	Edner Rudolph	Savannah, RFD 2
Montana	Joan A. Reichelt	Fort Benton
Nebraska	Joseph Junior Kovar	Wilber, RFD 1
Nevada	Frank Soares	Fallon
New Hampshire	Robert Coffey	Portsmouth, RFD 1
New Mexico	George L. Mullins	Rogers, RFD 1
New York	Dewitt E. Van Noy	Canandaigua, RFD 2
North Carolina	Donald E. Brown	Franklin, RFD 2
North Dakota	Delbert Glenn Moore	Forbes, Rt. 1
Ohio	Leonard Eugene Belville	Marysville, RFD 4
Oklahoma	Rita M. Ludwig	Hunter
Rhode Island	Allen C. Smith, Jr.	Kingston, 74 So. Road
South Carolina	Perry Sprawls, Jr.	Williston, RFD 2
South Dakota	Kenneth M. Garry	Salem, Box 55
Tennessee	Elizabeth Spence	Tullahoma, RFD 1
*Texas	Charles Hoelscher	Rowena, RFD 1
Utah	Doris Keller	Manti
Vermont	Russell A. Carleton	West Rutland, RFD 1
Virginia	Edith T. Collins	Roseland, RFD 1
West Virginia	Wayne C. Spiggle, Jr.	Davis
Wisconsin	Thomas Keyes	Plymouth, R. 3
Wyoming	Gerald E. Stricker	Torrington, R. 2

*Denotes National Winner.

If you are re-wiring your farm home, remember to run some circuits vertically through the house, thus putting each floor on several circuits and avoiding the possibility of an entire floor being plunged into darkness when a fuse blows.

—I'm proud I am a farmer!—

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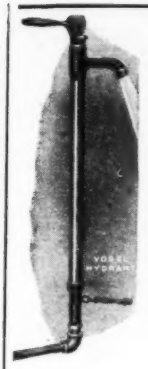

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Electric Controls and Their Application

Branch Circuits and Wire Identification

By PROF. D. C. SPRAGUE
Pennsylvania State College

Branch circuits carry the electrical energy from the distribution panel to the electrical outlet. There are several different kinds of branch circuits. The most common is the lighting circuit. It supplies current to permanently connected light and convenience outlets. This is a 15 ampere, 115v branch circuit. It is designed for equipment that is used now and then, but all of which is not likely to be in use at the same time. Lamps, clocks, fans and radios are the type of equipment for which this circuit is designed.

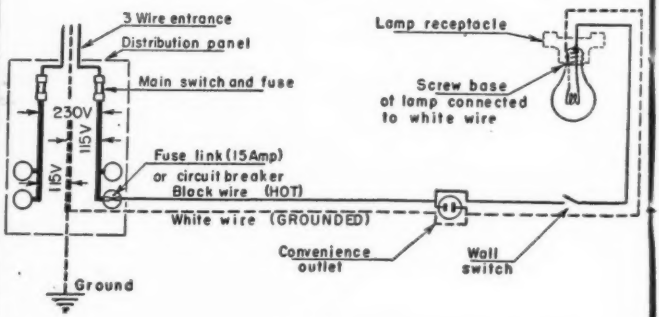
The wire used is No. 14. The diagram illustrates two uses for such a circuit and shows the important parts that make it up. A wall switch is used to control a permanent light. The convenience outlet shown is connected all of the time. Other permanent lights can be wired in such a circuit. They may be controlled by switches located in the lamp sockets. Such lights are commonly used in clothes closets, over laundry tubs or work benches. Convenience outlets can also be controlled by a wall switch in such a circuit. This allows portable lamps, plugged into such an outlet, to be turned on or off at the wall switch when entering or leaving the room. Not more than ten outlets, lighting or convenience, may be installed on a 15 ampere circuit.

The second kind of branch circuit is the 20-ampere, 115v appliance circuit. These are intended to provide convenience outlets for the larger pieces of portable electrical equipment. These include toasters, space heaters, irons, portable roasters, etc. Motor driven equipment such as ironers, washing machines, ice cream freezers etc., with motors under ⅓ horsepower may be used. Not more than ten outlets are permissible on such a circuit. Wire used is No. 12.

The third kind of branch circuit is an individual appliance or equipment circuit. These are 115 volt or 230 volt, depending on the equipment to which they carry energy. Ranges, water heaters, food freezers, milk coolers, barn ventilating fans, hay dryers, water systems and other equipment, which operates automatically, should have individual circuits. Wire size and fuses are determined by equipment used and the voltage of the circuit.

All three kinds of circuits have certain things in common. In each one there is a direct ground connection at the distribution panel. This connection makes electrical contact with moist

BRANCH CIRCUIT
(schematic)



earth. The grounded, or neutral wire is always continuous. It must never be interrupted by a switch or fuse.

The individual wires of a circuit are colored so that they may be identified, white insulated wire is used for the ground connection. On a 115v circuit, the hot wire is black. On a 230v circuit, there are two hot wires, one black and one red. There is a difference of 115 volts between each of the hot wires and the ground.

When all fuse and switch connections are made in the hot wires and the white or grounded wire is continuous, the system is said to be polarized. The convenience outlet shown in the illustration is also polarized. One of the two slots is larger than the other. This makes it necessary to have polarized plugs on all portable equipment to be connected. It makes it possible to be sure that any switches on the portable equipment are connected to the hot wire.

EDITOR'S NOTE: This is the second of a series of articles by Prof. Sprague. The next will appear in an early issue.

Sewing Tips

. . . . . (Here from page 19)

with a piece of tissue paper underneath the material. When the seam is sewn, gently ease tissue away from the stitching.

Finish stitching tucks or darts by stitching back ½ inch over the original stitching. This prevents the ends from loosening and fraying out. Or you may prefer to draw both ends of the thread to the reverse side and tie them into a knot to finish the tuck or dart.

The final touches on a garment, such as seam finishing, slip-stitching the hem, and sewing on buttons, are usually done by hand. Overcast most seams to prevent them from fraying. However, others may be pressed open, the raw edges turned back, and finished with a short running stitch or machine stitch. If you like to finish the seams with seam binding, be sure to baste the binding before you stitch.

To sew buttons on well, hold a pin across the top of the button before starting to sew. Sew as usual, bringing the stitches out over the pin until the button is secure. Remove the pin. Then wind the thread around the threads between the button and the fabric. This provides a strong stem for the button. Always sew buttons to a double thickness of fabric. Sometimes a second, tiny button, placed directly beneath the top button, helps relieve the strain. Sew it on to the underside of the fabric where it will be hidden.

Sewing Leather

Soft leather is easy to sew on a home machine. But thick or hard leather needs to be sewed by hand. One important difference between sewing leather and sewing cloth is that the stitches on leather must be right the first time. When you are repairing leather jackets, belts, straps or handbags, mistaken stitches, even when ripped out, leave their mark.

To stitch soft leather by machine, use a larger sized needle than for ordinary sewing. Lengthen the machine stitch so that needle holes will not be so close that they weaken or tear the leather. To prevent scuffing by the feed dog of the machine, put a piece of smooth paper under the leather as you sew. Then gently help feed in the leather and paper together. After stitching, tear away the paper on one side and pull out from the other side so that no bits of paper are left under the stitching.

To sew thick or hard leathers, use hand back-stitching which is strong and looks like machine stitching. Holes for hand-stitching may be made by running the leather through an unthreaded machine, using a strong needle. Sew with buttonhole twist, heavy-duty cotton or linen thread. To strengthen thread and keep it from cutting the leather, wax by drawing it over a cake of beeswax.

Hard leather is softer, more flexible and often easier to work with when damp. It may help to soak the leather and sew it while wet. However, because wet leather is weaker than dry leather, care must be taken not

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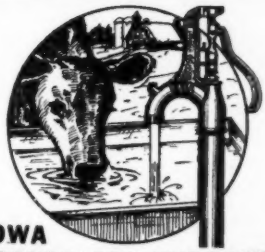
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to break or tear it while moist.

After sewing, either by hand or machine, make the stitching blend in with the leather. This can be done by applying regular or suede dressing, depending on the leather being stitched.

Hurry! Hurry! Hurry!

By MRS. GEORGE W. McFARLAND
R 2, Latrobe, Pa.

Before we bought an electric range this was a typical day in my life:

At 6 a.m. I awakened suddenly and looked at the clock. "Oh, dear." I would have to hurry if breakfast was to be ready when the men came from the barn. No time to stretch or yawn but hurry, hurry, hurry.

I was soon in the kitchen shaking the ashes down in my coal range. Then on with my boots to carry out the ash pan. The wood box and coal bucket were empty so a trip to the cellar to refill them. Soon the fire was burning, but a glance at the clock told me time was passing swiftly.

Just then the children began to shout and I knew I must hustle them into their clothes before they chased around in their night clothes and got chilled. I put the coffee pot and oatmeal on the range, then went to the living room to help organize the dressing. Freddie's sock was missing and clean shirts had to be brought from the bed room.

By the time I got back to the kitchen the fire had burned down and the water was far from boiling. I poked away at the fire, added some wood, then hurriedly lit the old two-burner oil range. I lit the burner that hadn't been used for a few days and a vile smoke filled the kitchen so I had to open the door and windows, nearly freezing ourselves while the smoke cleared out of the room making it habitable again.

Well, breakfast was ready in time, but a lot of my energy was gone too. So I let down after breakfast and didn't hurry with my housework. At 10 o'clock a car stopped and Aunt Maggie and Cousin Luella were coming up the walk.

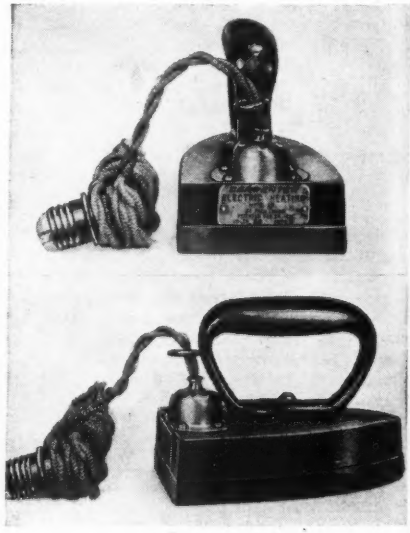
I looked at the range. The fire was down. Needless to say, I spent the time I would have liked to spend talking leisurely with Aunt Maggie and Luella, poking and shaking the fire. I couldn't hope to bake anything for dessert. The tank in the oil range was empty, so I raced to the cellar to fill it. After dinner they offered to help with the dishes, and I was so

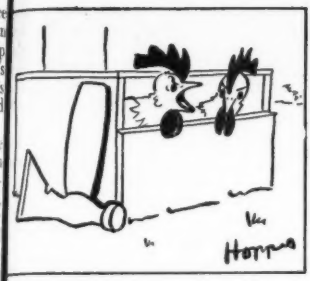
First Electric Iron

This item of historical interest is presented through the courtesy of J. S. McMillan, vice president, Northern States Power Co., Eau Claire, Wisc. who has possession of this early Carpenter Electric Iron. The iron was purchased at the Chicago World's Fair in 1893 by W. G. Balcom.

The electric iron was invented by Charles E. Carpenter while a student at the University of Minnesota in 1889.

You would scarcely recognize this as an electric iron among the sleek, streamlined, chrome plated automatic models of today; and the Underwriters' Laboratories would ban it as unsafe. We do progress!





"Hey, Roostol Looks as if the preacher is comin' to visit, or the income tax collector is going to take EVERYTHING this time."

ashamed of my black pots and pans. . . .

Now, a typical day after an electric range was installed in my kitchen:

I awoke at 6, took a peep at the clock, then stretched and yawned, took another cat-nap and got up at 6:30. The children were waking so I helped them get their clothes ready and then strolled into the kitchen. A flip of the button and the unit was red hot. In just 15 minutes breakfast was ready and I felt fresh as the morning breeze. So after breakfast I sailed into my housework and soon had my house spic and span. Yes, Aunt Maggie and Luella came to call. I stirred up a cake, put my meat and potatoes, along with the cake, into the oven, set the controls, and visited while I prepared a salad. How Aunt Maggie and Luella raved about my lunch, and also about my range. They also noticed how bright and shiny all my pots and pans were.

What a wonderful helper an electric range is!

Range Saves Many Days

By **MRS. TROY McKINNEY**
Box 271, Hamilton, Mont.

Being a very busy woman, keeping house for my husband and myself and holding down a full time job in town, I was always a little bit irritated at losing so much time waiting for the coal-wood range to get hot so I could prepare our meals. In winter we burned coal, and usually I had to empty the ashes once a day, and the ashes and soot had to be cleaned from under the oven often. There was always dust, or ashes and particles of soot in the air, which settled on everything. Soot would get on the top of the range, then on the bottom of kettles, and from them to the work tables, all of which made much extra work.

In warm weather we did not have an adequate supply of hot water.

Nearly a year ago we had an electric range and water heater installed. Now I often have meals ready in less time than it took to get the old range hot. I can go about my work and know that the heat will stay the same, and the automatic timing makes it possible to start a meal cooking and have it ready to serve when I get home. I do practically all of my baking and canning in the evening and my kitchen is always cool, even on the hottest days. I often wash early in the morning, and as there is always plenty of hot water, I do not have to wait for the range to heat it.

Counting the time my electric range saves as one-half hour each day—and I know it is more than that—I save 22¾ eight-hour days in one year. The electricity costs little, if any, more than coal and wood.

If you have candied fruit peel left over from fruit cake and cooky baking, use it to give yeast coffee cakes a bit of holiday glamor. For a candied fruit topping, first mix one-fourth cup sugar and two teaspoons cinnamon. Add three-fourths cup chopped nuts and three-fourths cup chopped candied fruit peel. Blend well. Sprinkle over coffee cakes and yeast puffs before baking. The recipe makes 1½ cups topping.

Better, Easier Grooming with Sunbeam STEWART ELECTRIC GROOMING BRUSH

This new, all-purpose rotary grooming brush will do a *better, faster* and *easier* job of cleaning farm animals. Ideal for dairy cattle. Massages the skin, gives beautiful luster to hair. Nylon bristles remove loose hair, embedded dust and dirt. For 110-120 volts AC-DC. Complete unit with air-cooled, ball-bearing motor $36.00 (Denver and West, $36.25). Grooming brush head also available as an attachment for Clipmaster or Shearmaster, $16.25 (Denver and West, $16.50).

Sunbeam CORPORATION
Dept. 30, 5600 Roosevelt Road, Chicago 50, Ill.

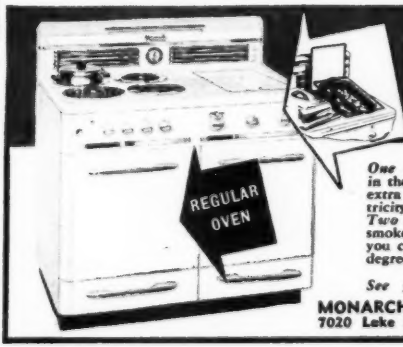
CUT YOUR MILKHOUSE HEATING COSTS BY MORE THAN HALF

HEET FLO
"HEAT PUMP"
Pat. Pend.
ONLY $59.95

With Heet-Flo control (only $59.95) you can convert your milk cooler to a heat pump and heat your milk house with your milk cooler.

See your dealer or write us today for information.

DAIRYLAND EQUIPMENT CO.
4424 Excelsior Blvd., Minneapolis 16, Minn.



Only Monarch has these 2 ovens!

One . . . . a roaster oven built right in the top of your Electric Range. This extra oven saves stooping, saves electricity. (Flush with top when closed.)
Two . . . . extra-large regular oven with smokeless broiler. Using both ovens, you can bake and roast at two different degrees of heat at the same time!

See your Monarch dealer or write
MONARCH MALLEABLE RANGE CO.
7020 Lake Street Beaver Dam, Wis.

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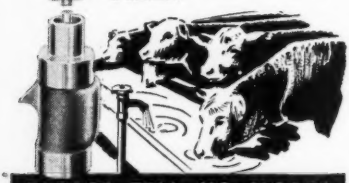
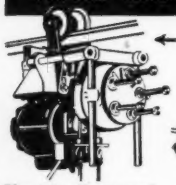
TRADE MARK
FREEZE PROOF
HYDRANT
YEAR 'ROUND
OUTDOOR
WATER SERVICE
Running water for stock all winter. Shut-off valve is below frost line. Hydrant drains automatically. Easy to install . . . lasts a lifetime.

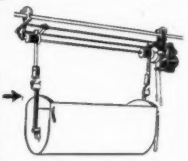


PLEASE TELL US MORE!
STRATAFLO PRODUCTS, INC., Fort Wayne 1, Ind.
Please send Bulletin No. 901 on Strataflo Non-Freezing ☐ Yard Hydrants; ☐ Wall Hydrants.
NAME
CITY
COUNTY STATE
SAVE TIME AND LABOR

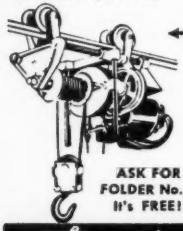
SEND FOR *FREE* FOLDER ABOUT 3 BRAND NEW FARM LABOR SAVERS



← Electric Power Unit attaches to present litter carrier. No work! $87.00



Electric Powered LITTER or FEED → CARRIER. Attaches to any make feed or litter tub. $138.00



← Multi-Purpose POWER HOIST. Lifts 500 lbs. Has 1001 uses on any farm! Complete, trolley included. $108.00

ASK FOR FOLDER No. 2 It's FREE!

THE Flinchbaugh COMPANY
EBERTS LANE, YORK, PA.

New Crop Plus Better Curing

. . . . . (Here from page 11)

slowest speed to .25 inches at the highest speed. Regardless of the speed at which the fan is operated, a uniform pressure is obtained. This insures even distribution of the air.

Electricity was chosen as the source of heat because of its general availability, ease of application, and its adaptability to accurate control and automatic operation. A continuous record of the inside and outside temperature and humidity was made during the operation of the curing barn. The outside temperature varied during this period from a low of 58° at night to a high of 86° in the middle of the afternoon. The relative humidity varied from a high in early morning of 90% to a low of 40% by mid afternoon. Inside the curing shed the temperature was maintained at an average of about 82° and the humidity was maintained at an average of 55%.

The tobacco being cured is rolled outside the shed on a concrete ramp during suitable curing days. However, at night and during cloudy or rainy weather the barn is kept closed and the system operated continuously.

Experiment to be Continued for Five Year Period

Conclusions can not be drawn from the operating results of just one season. The experiment will be carried on over a five year period. However, general observations can be made regarding the new crop and the electrified barn for curing: The finished tobacco from the electrified barn appears to be a much superior quality than that finished by the old method.

The economy of the system will not be established until after the first crop marketing. However 3400 kwhrs of electricity were used in curing the first four primings. It is expected that the increase in value of the first priming alone will offset the entire electrical cost of all four primings.

Mr. Osborne reports that by use of the electrified barn, he was able to handle and cure twice as much acreage with the same amount of labor. Last year he had only .4 acre, whereas this year he handled .75 acre in fine shape with the same labor. He also points out that this method greatly reduces the possibility of rain damage to the crop during curing.

Mr. Osborne is very well pleased with his electrified barn and believes that every farmer who plans to raise Turkish tobacco should have a similar installation, in order to insure growing it profitably. The entire cost of the barn and curing equipment was about $900.

Ideas From Our Readers

"The most unusual use I have for electricity is to have my ⅜" electric drill help me crank my tractor when the battery is low. I have a stem that fits the crank hole on the tractor in my drill. I push the starter and turn the drill on."
H. BURDETTE, R-1, Freeport, Ohio

"Some farmers may not have thought of using the electric vacuum cleaner for sucking dust from filters on the furnace. It saves the cost of new filters."
MRS. L. SPRECHER, Sauk City, Wis.

"My most unusual use for electricity is cleaning fish with an electric motor equipped with a buffer."
A. R. ECKERT, R-1, Pulaski, Wis.

"We have a small apiary and find that our electric uncapping knife slices cappings from the combs much easier and quicker than steam or hot water knives."
MRS. J. A. LARSON, Taylors Falls, Minn.

"When I have left-over dampened clothes, I put them in my freezer, until I can iron them."
MRS. H. WENGER, Elkhart, Ind.

If your pump takes water out of your well faster than it flows in, slow down the pump. This applies primarily to piston type pumps. You can slow down the pump by using a larger pulley on the pump or a smaller one on the motor. The capacity of centrifugal and most jet type pumps may be reduced by placing a throttling valve in the discharge pipe.

What Would You Say?

CONTEST

Awards for November Contest

No wonder the turkey is frightened,
Fall's here and long is the night,
But the farm is easily brightened
? ? ? ? ?

The Winning Fourth Lines

FIRST PRIZE—$25 Cash

"Without 'match' for the 'current' daylight."

Mrs. Chas. F. Goessl
RFD 1, Maribel, Wis.

SECOND PRIZE—$10 Cash

"A flick, in a flash, farmyard's bright."

Mrs. Martha S. Prindle
Dogtown Road, Chesapeake, Ohio

Five Consolation Prizes—$3 Each

"When the 'switch' drives gloom from sight."

Patricia Bennet
c/o Pabst Farms, Oconomowoc, Wis.

"'Lectric rays spread cheer and delight."

Mrs. Richard D. Claus
Plymouth, Iowa

"Making choretime less of a blight."

Mrs. Howard Coe
RFD 1, Box 6, Laura, Ill.

"A flood of light for a 'mite'."

Mrs. Ervin Schneller
RFD 1, Lodi, Wis.

"When current brings man-made daylight."

Mrs. Marjorie Truitt
Snowden, No. Carolina

Honorable Mention

Orrin Black, RFD 1, St. Jacob, Ill., Mrs. Thos. Logan, Jr., RFD 3, Schenectady, N. Y., Lola Waterman Sigel, RFD 1, Sabattus, Me., Hilda Richardson, RFD 2, Harris, Mo., Mrs. Engelbert Walch, RFD 2, Lodi, Wis., Mrs. Anton Roelke, RFD 2, Mazomanie, Wis., E. E. Bennett, RFD 1, Horicon, Wis., Emil Wilke, RFD 1, Forestville, Wis.

Here is a contest the whole family can enjoy. Cash Prizes will be awarded for the best suggestion for a fourth line to complete the verse at the bottom of this page. Lots of fu and you may win $25 cash.

RULES—JANUARY CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25 cash; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to the Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill. before February 1.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the March 1951 issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

The bedroom's cold this time of year
And sheets feel just like ice!
A 'lectric blanket, please my dear
? ? ? ? ? ?

My suggestion for a fourth line to the above verse is:

.....

(A) From which kind of dealer do you buy your electric farm equipment?

Appliance Dealer ☐	Furniture Store ☐	Dept. Store ☐
Hardware Store ☐	Farm Equipment ☐	Power Company ☐
Mail Order House ☐	Auto Accessory ☐	Auto Dealer ☐
Radio & Music ☐	Farm Co-op ☐	Elec. Contractor ☐

Why do you prefer to buy from this dealer?

Location ☐	Service Facilities ☐	Carries Preferred Brands ☐
Reputation ☐	Friendship ☐	Past Business Dealings ☐

My name is .....

R.F.D. ..... Post Office .....

County ..... State .....

Mr. H.N. Young,
Director, Agric. Exp. Sta.,
Polytechnic Institute,
Blacksburg, Va.

Sec. 34.66, P. L. and R.
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Dayton, Ohio
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ELECTRICITY ON THE FARM
24 W. 40th St., New York 18, N.Y.

Formula for Success

HARD WORK + AN INTELLIGENT USE OF LABOR-SAVING EQUIPMENT = SUCCESS

All the rules and advice on "how to be a successful farmer" can usually be summed up in this simple formula — "HARD WORK — plus an INTELLIGENT USE OF LABOR-SAVING EQUIPMENT."

There is no need to stress the hard work part of the formula. It is the basic ingredient of success in any field — business, farming or professions.

BUT — "the intelligent use of labor-saving equipment" is fully as important, and more often neglected. With power and machines, the farmer can increase ten-fold the amount of work he can accomplish in one day. Here is the secret of farm profits.

Electricity is the key to successful farming. It makes available unlimited power to perform with magical ease the back-breaking, time-consuming tasks. It lights. It cooks. It cools. It draws water and pumps it wherever needed. It saws wood. It incubates eggs and broods chicks. It milks the cows and cools the milk. It hoists hay. It grades fruit. It cures hay in the barn. It cleans dairy stable gutters.

Electricity does these things not only better and quicker than by any other method — it also does these tasks more economically.

This magazine is sent to you free with our best wishes, and with the hope that from its various pages you will obtain ideas which will be of help—on your farm and in your home.

Call our Farm Service Advisor for any help you need. His service is FREE

CONSUMERS POWER COMPANY